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AMBIENT AIR QUALITY SURVEY

CANADA CEMENT LaFARGE

WOODSTOCK, ONTARIO

NOVEMBER, 1983

ARB-187-83-ARSP

April, 1984

Ontario
Ministry of the Environment

The Honourable
Andrew S. Brandt
Minister

Brock A. Smith
Deputy Minister

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Canada Cement LaFarge
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Ambient Air Quality Survey
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Prepared for
Southwestern Region
Ministry of the Environment

Monitoring and Instrumentation Development Unit
Atmospheric Research and Special Programs Section
Air Resources Branch
Ministry of the Environment

April, 1984

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1.0 Monitoring Request/Rationale

As requested by the Southwestern Region of the Ministry of the Environment, the Monitoring and Instrumentation Development Unit of the Air Resources Branch conducted an ambient air quality survey during November of 1983 in the vicinity of Canada Cement LaFarge which is located approximately 15 km northwest of Woodstock.

The monitoring rationale was twofold

- Determine ground level concentrations (glc's) of the commonly regulated gaseous contaminants at the point of impingement and verify if there were any exceedances of the established Environmental Guidelines, Criteria or Standards (refer to Table #3 on page 14) during the operation of this cement plant with and without supplementary fuel being utilized during its processing.

- Determine glc's of selected gaseous hydrocarbon contaminants at the point of impingement and verify if there were any exceedances of the Environmental Guidelines or Criteria during the operation of this cement plant with and without supplementary fuel being utilized during its processing. The selection of these specific hydrocarbons was based on a memorandum dated October 31, 1983 and addressed to Mr. R. Bell from Mr. W. Cook, Scientist of the Chemistry Section of the London Regional Lab. A copy of this memorandum is included in this report on pages 15 and 16 for the reader's convenience.

2.0 Source and Vicinity

Canada Cement LaFarge is located approximately 15 km northwest of Woodstock, Ontario and is situated in a rural environment where farming is a major industry. The terrain of this area is flat and open and good vehicular accessibility was realized in all four quadrants around this plant - see Map #1 on page 10.

3.0 MAMu #1 and Parameters Measured

Mobile Air Monitoring Unit #1 (MAMu #1) contains a number of analyzers for monitoring common gaseous pollutants in air. For this survey, the most important were analyzers for the measurement of methane (CH_4) and non-methane (TH-M) components of total hydrocarbons (THC), ozone (0_3), and the nitric oxide (NO) and nitrogen dioxide (NO_2) components of nitrogen oxides (NO_x). After the field work of this survey was completed, the analysis of the hydrocarbon analyzer results (for the determination of CH_4, TH-M and THC) displayed some intermittent problems relating to this instrument's analogue signal transferral to the data acquisition system (DAS). Because of this fact, these measurements will not appear in this report. Furthermore, there are no Environmental Guidelines or Criteria for these measured hydrocarbons and these results were only used for plume tracking.

A gas chromatograph (GC) with a sample preconcentrator system was used to determine the concentrations of a large number of gaseous organic components as listed in Table 1 on page 12. Ambient air samples were collected for 1-hour each on a "Florisil -Molecular Sieve 13X - Spherocarb" cartridge for thermal desorption and analysis by the GC. These samples were gathered through the MAMu sampling probe concurrently with the other pollutants over the general monitoring periods listed in Table 2 on page 13.

Meteorological conditions were monitored simultaneously to give wind speed and direction, temperature, barometric pressure and solar radiation data.

All times reported herein are based on a 24-hr clock and are Eastern Standard.

4.0 Survey Strategy

The operational procedure was to calibrate the analyzers and the gas chromatograph each day before proceeding to the vicinity of Canada Cement LaFarge. Sampling was to be conducted at downwind sites and therefore would be dependent on the forecasted and observed winds.

The first week of monitoring (Nov. 10 and 11) was used mainly for analytical check-out purposes. The GC was calibrated and along with its heated standard, the sampling procedure and analyses were verified. No supplementary fuel was being burnt during this week, hence the resulting acquired data depicted plant operation using conventional fuel only.

For the second week of monitoring (Nov. 22, 23 and 24), the MAMu investigated the conditions as outlined in section 1.0.

The monitoring staff were informed of the plant status by MOE Regional staff members who were in contact with the plant operational personnel.

5.0 Discussion

November 10

On this date, the two frontal systems located over Michigan were just west of Woodstock. The winds were forecasted to back from easterly to northeasterly as the day evolved.

When MAMu #1 arrived at the site, the sky was overcast with no precipitation and the stack emissions visually were light. The winds were south southeast and because of forecasted backing, MAMu #1 set up approximately 0.5 km due west of the stacks at position #1 as shown on Map #2 on page 11. MAMu #1 started acquiring data at 1055 hrs. As can be seen from the concentration/time plot for this monitoring period (Graph #1 on page 18), between 1230 hrs and 1425 hrs, elevated concentrations of CO and NO_x were monitored. The NO_x Standard of 0.27 ppm was exceeded continually between 1230 hrs and 1424 hrs and the CO Standard of 5.2 ppm was exceeded between 1320 hrs and 1425 hrs. The G.C. sample taken between 1331 hrs and 1431 hrs was very clean. The maximum concentration of the selected hydrocarbons was 1.3 ug/m^3 for n-hexane (Table #1 on page 12).

Since the winds were south southeast and little or no backing was evident up to 1440 hrs, MAMu #1 moved further north on Concession #4 to a parking area just northwest of the plant. Between 1523 hrs and 1703 hrs,

only the ground level concentrations of CO and NO_x were elevated (see Graph #2 on page 19). For this entire period, the Standards for these two pollutants were exceeded with the maximum half-hour average concentrations of CO and NO_x being 10.68 ppm and 1.50 ppm respectively. Once again, the G.C. analyses for this time depicted very little loading (refer to Table #1 on page 12).

For these two aforementioned monitoring periods (#1003 and #1004), only elevated concentrations of NO_x and CO were monitored. Low concentrations of the selected hydrocarbons were analyzed (G.C. results in Table #1 on page 12,especially note n-octane) and MAMu #1 was positioned very close to, or downwind of the plant (note Windrose #2 on page 28 for period #1004). The MAMu was not sampling its own exhaust (n-octane results); the NO_x and CO analyzers were recalibrated after this survey and found to be within specifications; and the stack emissions visually were light or non-existent throughout these two monitoring periods. Because of these facts, the source or sources of these high NO_x and CO atmospheric concentrations is unknown at this time.

At 1700 hrs, the monitoring staff were informed that Canada Cement LaFarge had one of its four precipitators down as of 1600 hrs and it would not be repaired until Tuesday next week. Thus they would not be burning any supplementary fuel until that time.

November 11

The second of the two frontal systems pushed through the Woodstock area overnight and the temperature had dropped considerably (to freezing from $10^{o}C$ on November 10). The sky was overcast, with brisk northerly winds at approximately 30 km/hr. Snow began falling after 1200 hrs.

MAMu #1 set up two kilometres due south of Canada Cement LaFarge and commenced monitoring at 1032 hrs. The plant was burning regular fuel only and its plume was very visible and impinging at the site of MAMu #1 (refer to Windrose #3 on page 29). MAMu #1 monitored at this site until 1312 hrs and detected very little contamination. The two GC chromatograms acquired at this site were very clean. Dichloromethane was 1.2 ug/m^3 for a one-hour averaged sample and this was the maximum concentration recorded for the 26 selected hydrocarbons.

November 22

A low pressure centre located just north of Thunder Bay on November 21 moved northeastward during the night. During the early morning of November 22, this weather system was located just east of Woodstock and the Woodstock area was experiencing some nocturnal cooling. A light to moderate west to northwesterly wind was present by the time MAMu #1 arrived at monitoring site #4 on Gypsum Road, 2.2 km downwind of the plant. The sky was clear and the plume was very visible.

No supplementary fuel was being burned by Canada Cement LaFarge at this time and MAMu #1 monitored at site #4 from 0909 hrs to 0949 hrs. The GC chromatogram and the analysis for the common pollutants clearly showed minimal concentrations in this area. Only CO depicted concentrations in excess of background with a maximum half hour average glc of 1.31 ppm which is well below its 5.2 ppm Environmental Standard. The windrose for the period shows the monitoring site was positioned directly downwind of the plant (see Windrose #4 on page 30).

The Ministry staff were notified that a supplementary fuel tanker would commence unloading at the plant at approximately 1000 hrs.

MAMu #1 moved closer to the plant and set up on country road #6, approximately 0.2 km north of highway #2 and commenced monitoring at 1005 hrs. The unloading interval was between 1015 hrs and 1115 hrs. MAMu #1 kept monitoring at this site (#5) until 1345 hrs and once again the results obtained were just above background. The carbon monoxide maximum, half-hour average concentration (MHAC) was 2.54 ppm and the four chromatograms were very clean. Based on existing atmospheric stability conditions, it is believed that MAMu #1 was monitoring both low level and plume emissions from the plant at this site (refer to Windrose #5 on page 31).

Since the winds were veering slightly, MAMu #1 moved to the corner of country road #6 and highway #2 and recommenced monitoring at 1356 hrs. A second tanker of supplementary fuel was being unloaded at this time. MAMu #1 remained at this site (#6) until 1506 hrs and the resulting data again depicted a relatively clean environment. (Refer to Table #1 for

chromatogram 1358-1458 and data printout for monitoring period 2204). The windrose clearly shows MAMu #1 was positioned downwind of the plant (Windrose #6 on page 32).

November 23

A warm front was lying west-east over Lake Erie and this frontal system was slowly pushing northeastward and Woodstock was in the leading edge of this system.

On November 22nd, the plant notified the Ministry staff that they would commence a supplementary fuel burn at 2000 hrs. Because of this fact and expected light easterly winds or calm conditions in the early morning, MAMu #1 arrived at Concession #4, 0.6 km north of Highway #2 and 0.5 km west of the stacks at 0500 hrs on November 23rd. Monitoring commenced at this site (#7) at 0537 hrs. The sky was overcast (stratocumulus) and the winds were moderate - (20 km/hr - the frontal system moved faster than prognosed).

At 0830 hrs, the Ministry staff were notified that the plant had stopped burning supplementary fuel at 0430 hrs because their kiln temperature had dropped below 1200^{o}C, however they were expected to raise the temperature and recommence the supplementary fuel burning before noon.

Use of 20% supplementary fuel commenced at 1140 hrs. A third fuel transfer from a tanker to holding tank #2 took place between 1225 hrs and 1315 hrs. Light rain commenced around noon.

MAMu #1 monitored at site #7 until 1527 hrs. From 0537 hrs up to this time, ten chromatograms and 9.9 hrs of data for the common pollutants were acquired. As noted from the windrose for this monitoring period (Windrose #7 on page 33), MAMu #1 was located downwind of the plant. Nevertheless, only low level concentrations of the monitored contaminants were measured. Of the common pollutants, carbon monoxide displayed the highest MHAC and its value was 1.27 ppm. The chromatograms duplicated no enhancements or distinguishing irregularities between the fuel transfer, supplementary fuel burn and regular fuel burn operations at this plant. All the acquired chromatograms depicted concentrations of the selected hydrocarbons below, at, or just above the detectable limits.

November 24

The cold front associated with the previous day's warm front pushed through Woodstock during the early morning of November 24. It was overcast with brisk south westerly winds (25 to 30 km/hr) at 0900 hrs.

MAMu #1 arrived at site #8 on Slant Road approximately 2.5 km northeast of the plant at 0930 hrs and monitored at this site from 0950 hrs to 1210 hrs. The windrose for this site (Windrose #8 on page 34) clearly shows that MAMu #1 was directly downwind of the plant and visual observations revealed that the unit was in the impingement zone. Up to 1140 hrs, the plant was burning 20% supplementary fuel. Two chromatograms were acquired at this site and once again all results were below, at, or just above the detection limits for the selected hydrocarbons. The 2.4 hrs of acquired common pollutant data revealed very low concentrations.

Because of the veering tendency of the wind behind the cold front, MAMu #1 moved further south on Slant Road to the railway tracks (a distance of 0.5 km) and began monitoring at this second site (#9) at 1223 hrs. After 1140 hrs, the plant commenced burning 40% supplementary fuel and continued until MAMu #1 terminated its monitoring at 1523 hrs.

Two chromatograms were acquired at this second site and once again no obvious enhancements of the selected hydrocarbons were recorded - all values were below, at,or just above the detection limits. The data for the standard contaminants essentially showed a clean environment.

November 25

MAMu #1 arrived at the plant site at 0930 hrs and the Ministry personnel were informed that the plant had been shut down as of midnight. There were no plumes visible at the plant site and hence MAMu #1 returned to Toronto thus ending this survey.

6.0 Summary

The environment downwind of Canada Cement LaFarge under the operating and meteorological conditions and monitoring rationale as set out in Section 1.0; i.e. monitoring of the plume during regular and supplementary fuel burning and monitoring of low-level emissions during tanker fuel transferring, was found to be very clean for the monitored contaminants. Only the CO and NO_x Environmental Standards were found to be exceeded during this survey. However, the source or sources of these two contaminants is unknown.

A chromatogram was run on Toronto air (at 880 Bay Street) on November 30, - refer to Table #1 on page 12. Comparison of this data and the data acquired downwind of the Canada Cement LaFarge (from this survey) shows that for the measured parameters, the environment downwind of Canada Cement LaFarge was significantly cleaner than that of Toronto.

Twenty-five chromatograms, 9 monitoring periods and 28.8 hours of commonly regulated pollutant data as acquired during 5 monitoring days comprised this study.

RB/mb/AR14-82

CANADA CEMENT LAFARGE

WOODSTOCK, ONTARIO

Plant centered at UTM co-ordinates 50920-47717

UTM - Universal Transverse Mercator grid - to nearest 100 metres

MAP #1

CANADA CEMENT LAFARGE

1983 Ambient Air Quality Survey

MONITORING SITES

MAP #2

TABLE #1
Canada Cement LaFarge
- Gas Chromatograph Results, ug/m^3

DATE	Nov. 10			Nov.11		Nov. 22						Nov. 23										Nov.24				MIN. DET. AMT.	Nov.30
TIME	1331 1431	1431 1531	1639 1739	1119 1219	1219 1319	0917 0952	1007 1102	1102 1202	1202 1301	1308 1358	1358 1458	0537 0632	0632 0732	0732 0832	0832 0932	0932 1032	1032 1132	1132 1232	1232 1332	1332 1432	1432 1532	0955 1050	1150 1250	1250 1350	1350 1450		880 Bay St.
n-propane	0.5	ND	0.6	ND	ND	0.1	0.2	0.2	0.1	ND	0.1	0.2	0.1	0.1	0.2	0.1	0.4	0.3	0.1	0.3	0.1	ND	0.3	ND	ND	0.05	1.7
n-butane	1.0	0.4	1.2	0.2	0.2	0.4	0.4	0.5	0.3	0.2	0.2	0.5	0.6	0.3	0.4	0.3	0.6	0.6	0.4	0.5	0.3	0.2	0.2	0.2	0.2	0.05	7.6
n-pentane	1.2	0.4	1.1	0.1	0.3	0.2	0.3	0.4	0.2	0.2	0.1	0.3	0.3	0.3	0.4	0.3	0.6	0.4	0.5	0.4	0.4	0.1	0.3	0.2	0.2	0.04	4.7
2,2-dimethylbutane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04	0.3
dichloromethane	0.9	0.4	0.4	1.2	ND	1.0	2.1	6.6	ND	ND	3.6	3.4	ND	ND	ND	ND	0.3	ND	0.9	ND	0.3	0.8	ND	ND	ND	0.04	0.2
n-hexane	1.3	0.7	1.4	0.9	0.3	0.1	0.4	0.4	0.2	0.2	0.2	0.4	0.6	0.3	0.3	0.2	0.5	0.5	0.4	0.3	0.4	0.2	0.4	0.2	0.2	0.06	2.7
chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.0C	ND
1,1,1-trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.30	2.9
benzene	0.5	0.4	0.4	0.3	0.2	0.1	0.5	0.4	0.3	0.2	0.3	0.5	0.8	0.3	0.4	0.2	0.5	0.8	0.5	0.3	0.7	0.3	0.3	0.2	0.3	0.03	3.7
2-methylhexane	0.5	ND	0.4	ND	ND	ND	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.06	4.7
2,2,4-trimethylpentane	0.1	0.7	0.1	ND	ND	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.8	0.6	0.1	0.1	0.1	0.1	ND	ND	ND	0.04	1.6
n-heptane	0.4	ND	0.4	ND	ND	ND	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.07	1.6
toluene	0.5	0.2	0.5	0.1	0.1	0.2	0.7	0.5	0.3	0.2	0.2	1.1	1.0	0.3	0.3	0.7	0.9	0.9	1.2	0.3	0.6	0.2	0.2	0.2	0.2	0.04	9.7
n-octane	0.4	ND	0.5	ND	ND	ND	0.1	0.1	ND	ND	ND	0.1	0.1	ND	ND	0.1	0.1	0.1	0.1	0.1	0.1	ND	0.1	ND	0.1	0.07	0.6
ethylbenzene	0.2	ND	0.3	ND	ND	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.4	0.4	0.2	0.2	0.1	0.2	0.1	0.1	0.05	2.3
m,p-xylene	0.6	0.2	0.8	ND	ND	0.3	0.6	0.4	0.2	0.1	0.1	0.6	0.6	0.3	0.4	0.7	0.7	1.2	1.1	0.5	0.7	0.2	0.6	0.1	0.2	0.05	8.1
o-xylene	0.3	ND	0.3	ND	ND	0.1	0.2	0.1	0.1	ND	0.1	0.2	0.2	0.1	0.1	0.3	0.3	0.4	0.3	0.2	0.3	0.1	0.2	ND	0.1	0.05	0.2
n-nonane	ND	ND	ND	ND	ND	ND	0.1	ND	ND	ND	ND	0.1	0.1	ND	ND	0.1	0.1	0.1	0.1	0.1	0.5	ND	ND	ND	0.1	0.07	0.8
isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1	ND	ND	ND	ND	0.06	0.2
n-propylbenzene	ND	ND	ND	ND	ND	0.1	0.1	0.1	ND	ND	ND	0.1	0.2	0.1	ND	ND	ND	ND	0.1	0.2	0.2	ND	0.2	ND	ND	0.07	0.6
1,3,5-trimethylbenzene	0.4	ND	0.5	ND	ND	ND	0.1	ND	ND	ND	ND	ND	0.1	ND	ND	0.1	0.1	0.1	ND	ND	0.2	ND	0.1	ND	ND	0.07	1.6
1,2,4-trimethylbenzene	0.5	ND	0.7	ND	ND	0.2	0.3	0.2	ND	ND	ND	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.3	0.6	0.1	0.4	ND	0.1	0.08	-
n-decane	ND	ND	ND	ND	ND	0.1	0.1	ND	ND	ND	ND	0.1	0.1	ND	ND	0.1	0.1	0.2	0.1	0.2	0.6	ND	ND	ND	0.1	0.09	1.2
1,2,3-trimethylbenzene	ND	ND	ND	ND	ND	ND	0.1	ND	ND	ND	ND	0.1	0.1	ND	ND	ND	ND	0.1	ND	ND	0.2	ND	0.1	ND	ND	0.10	1.3
n-undecane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2	ND	ND	ND	ND	0.1	ND	0.1	0.3	ND	ND	ND	ND	0.13	1.2
n-dodecane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	ND	ND	ND	0.25	-

ND = Not Detected
- = Not Monitored

6AR12-25

TABLE 2

TIME AND LOCATION OF GENERAL MONITORING PERIODS

DATE	TIME PERIOD	LOCATION	MON. PER. #	MAP SITE #	WIND DIR.	COMMENTS
Nov. 10	1055-1425	50895-477130	1003	1	SSE	Emissions were light. Due west of stacks.
Nov. 10	1523-1703	50875-477165	1004	2	E	After 1600 hrs, no supplementary fuel was burned
Nov. 11	1032-1312	50920-476945	1101	3	N	2 km directly downwind; brisk winds; emissions heavy; no supplementary fuel burned
Nov. 22	0909-0949	51170-477165	2202	4	W	2.2 km downwind; no supplementary fuel burnt
Nov. 22	1005-1345	51025-477165	2203	5	WSW	Unloading fuel tanker 1015-1115 hrs. No supplementary fuel burnt
Nov. 22	1356-1506	51030-477135	2204	6	W	Unloading 2nd fuel tanker 1330-1405 hrs. No supplementary fuel burnt.
Nov. 23	0537-1527	50885-477135	2302	7	E	Unloading fuel tanker 1225-1315 hrs. Supplementary fuel (20%) after 1140 hrs.
Nov. 24	0950-1210	51090-477295	2402	8	SW	Supplementary fuel @ 20%
Nov. 24	1223-1523	51135-477260	2403	9	W	Supplementary fuel @ 40% after 1140 hrs.

Location - In Universal Transverse Mercator grid co-ordinates
MON PER # - monitoring period number
MAP SITE # - refer to MAP #2 on page 11
WIND DIRECTION - direction wind blowing from

Table # 3

Pollutant Benchmarks

(based on a 30-minute average at point of impingement)

Pollutant	Amount	Comment
Carbon Monoxide (CO)	5.200 ppm	Standard
Sulphur Dioxide (SO_2)	0.300 ppm	Standard
Oxides of Nitrogen (NO_x)	0.270 ppm	Standard (as NO_2)
Ozone (O_3)	0.100 ppm	Standard
Hexane	35,000 ug/m^3	Guideline
Benzene	10,000 ug/m^3	Standard
Toluene	2,000 ug/m^3	Standard
Ethylbenzene	4,000 ug/m^3	Standard
p,m-Xylene	2,300 ug/m^3	Standard
Isopropylbenzene	100 ug/m^3	Provisional Guideline
1,2,4-Trimethylbenzene	100 ug/m^3	Guideline

Ontario
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MEMORANDUM Oct. 31, 1983

TO: Ron Bell,
Senior Project Scientist,
Atmospheric Research and
Special Programs Section,
Air Resources Branch,

FROM: Walter Cook,
Scientist, Chemistry Section,
London Regional Lab.

RE: Air Monitoring at
Canada Cement Lafarge

After our telephone conversation, 25/10/83, regarding which organic compounds should be monitored around Canada Cement Lafarge during their supplemental fuel test burn, I contacted Dave Gossman, Systech Technical Director. The Systech Corporation are under contract to perform analyses on the supplemental fuel before acceptance by Canada Cement Lafarge. Based on my conversation with Dave Gossman, the following organics appear to be typically consistent in quantities greater than 5% in the supplemental fuel from batch to batch.

Toluene up to 25% and mixed isomers of xylene up to 25%. Methyl ethyl ketone 5-10% acetone and methyl iso-butyl ketone totalling 5% combined. The dominant alcohol is normally iso-propanol running at about 5%. Cuts of mineral spirits are quite common involving say C_6 - C_{12} aliphatics totalling 20%. Occasionally there is one dominant aliphatic which may make up 5% of the entire solvent waste.

Since the xylene in the supplemental fuel usually is not from a high quality source it can contain up to say 3% ethyl benzene. We did not discuss methyl iso-amyl ketone but it is listed at 13.2% on the sample analysis sheet we originally discussed. Methylene chloride and trichloro-ethane are generally less than 1% but from a consideration of stack emissions it might be reasonable to monitor for their presence, along with maybe chloroform.

I hope you find this of some value. I would be pleased to be of any assistance I can during the actual monitoring.

Walter Cook

WC:mw
Fr 28 02

c.c. D. Glutek
M. Looby
J. Manuel
C. Schenk

APPENDIX

Concentration/Time Graphs Pages 18 to 26

Plots of running 30-minute average concentrations of NO_x, O_3 and CO and the meteorological parameters of solar radiation, ambient dry bulb temperature, atmospheric pressure - MSL, wind direction and wind speed for the specified monitoring periods.

Windroses Pages 27 to 35

Wind direction time frequency rose display based on 45 degree increments. Wind direction is from and the rose apex is shown centered over the monitoring site.

Statistical Printouts Pages 36 to 66

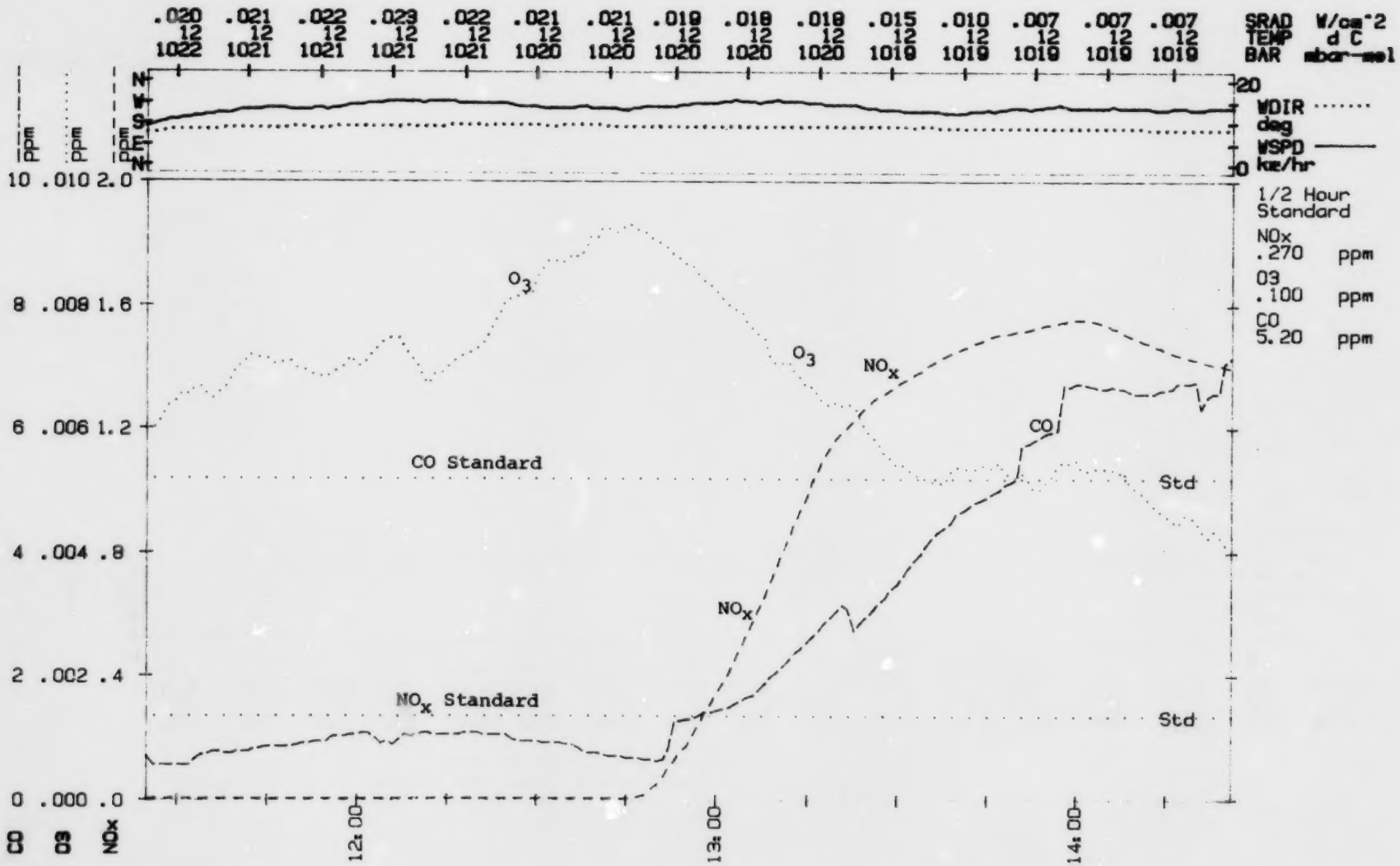
Tabular listings of incremental (as set by report time) 30-minute averages of the monitored pollutant concentrations and meteorological parameters for each monitoring period. The statistical summary at the end of each monitoring period gives monitoring units, arithmetic and geometric analysis, minimum and maximum readings (as per scan internal), minimum and maximum 30-minute averages, number of valid readings and minimum detectable limits.

Weather Maps Pages 67 to 73

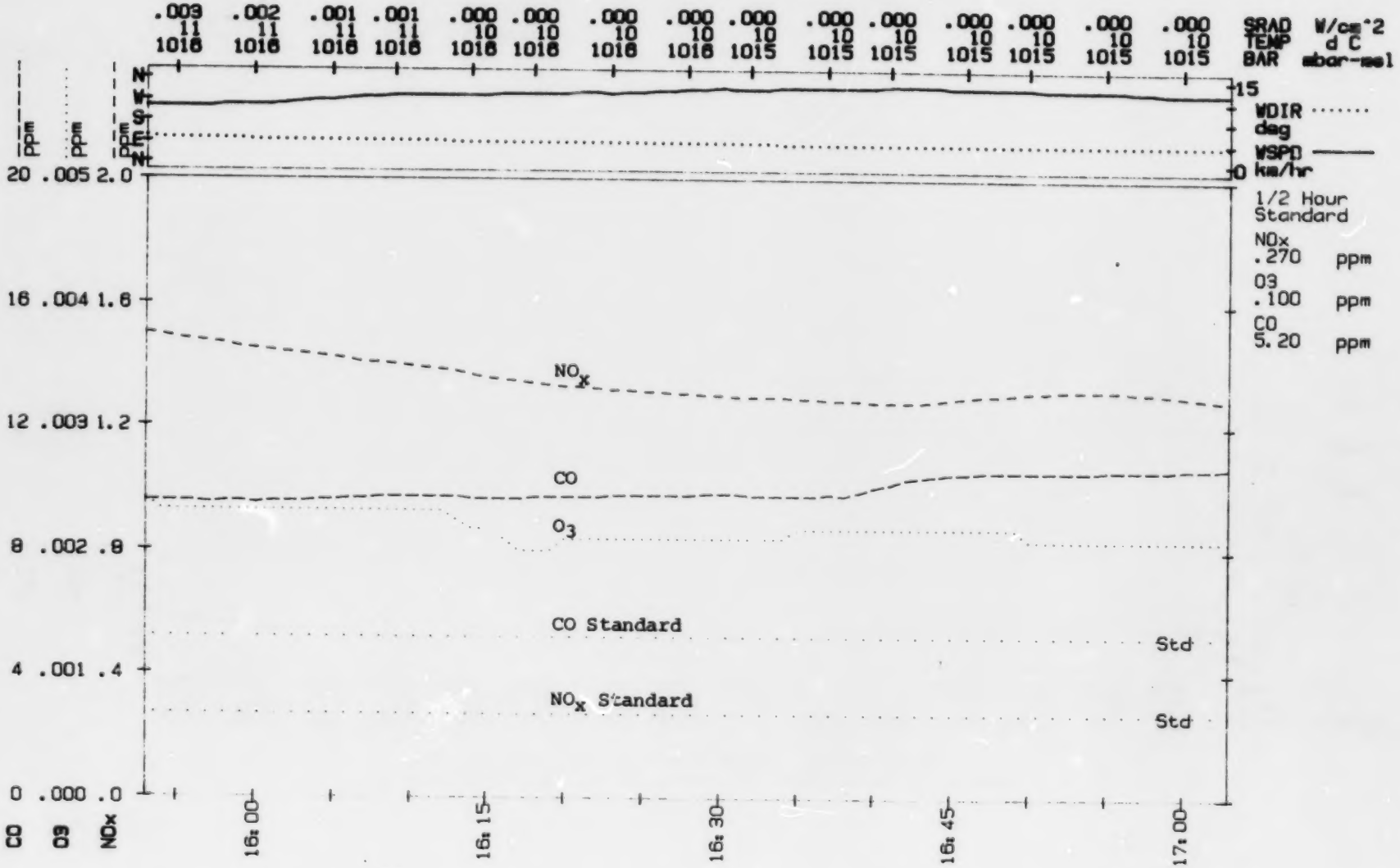
Standard public meteorological synoptic maps prepared by the Air Quality and Meteorological Section of the Air Resources Branch.

WOODSTOCK_LFG: 1003

Start: 83/11/10 10:56 Scan: 60 sec. Ave: 30.00 min.
Loc: CONC. #4: 0.3KM N HWY#2 (50895-477130)

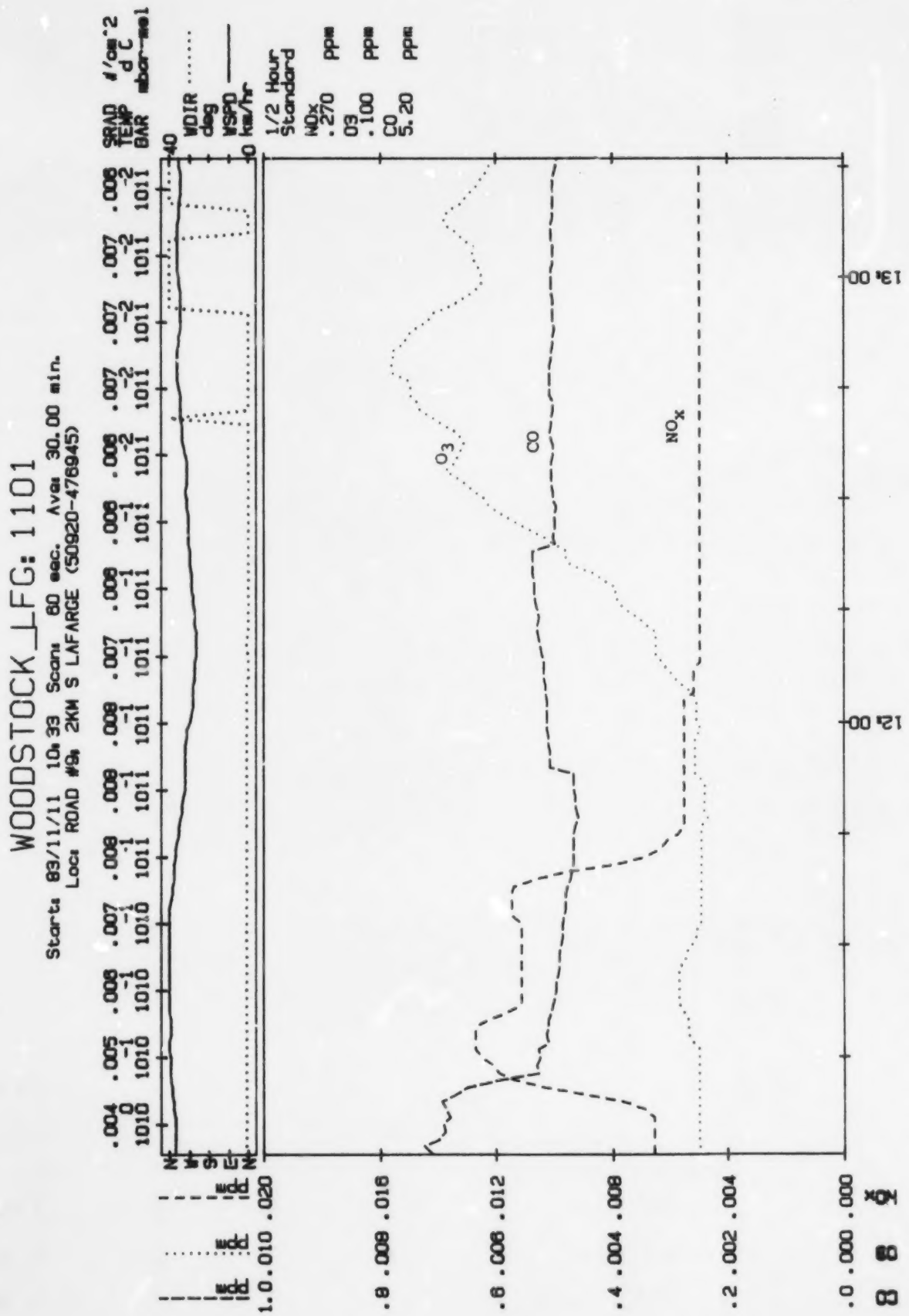


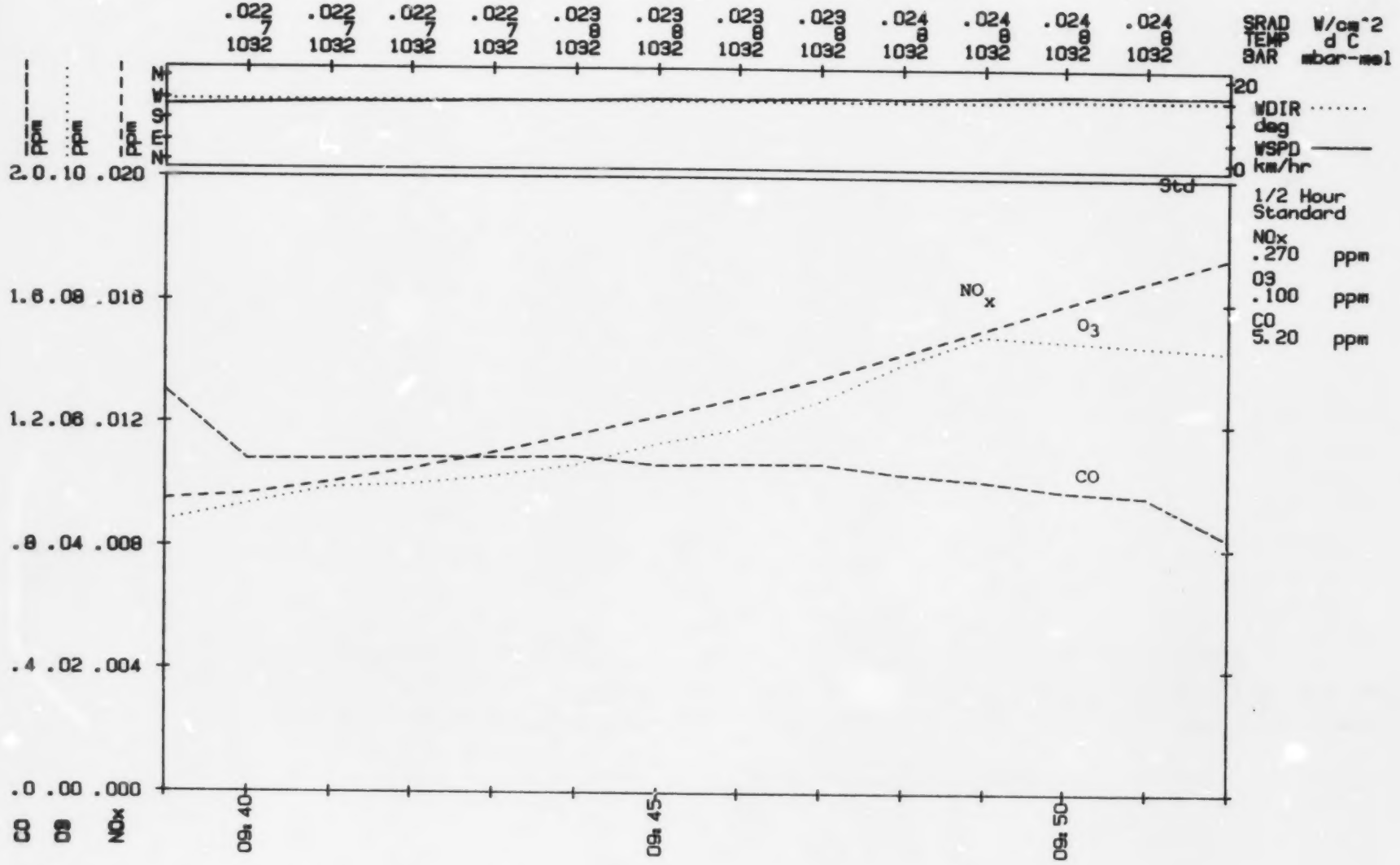
GRAPH #1


WOODSTOCK_LFG: 1004
Start: 83/11/10 15:24 Scan: 60 sec. Ave: 30.00 min.
Loc: NW OF LAFARGE ON CONC.#4 (50875-477165)
.003 .002 .001 .001 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000
11 11 11 11 10 10 10 10 10 10 10 10 10 10 10 10
1016 1016 1016 1016 1016 1016 1016 1016 1015 1015 1015 1015 1015 1015 1015 1015
SRAD W/cm^2
TEMP d C
BAR mbar-sel
N
W
S
E
N
15
WDIR
deg
WSPD
0 km/hr
ppm
ppm
ppm
20 .005 2.0
16 .004 1.6
12 .003 1.2
8 .002 .8
4 .001 .4
0 .000 .0
CO
O3
NOx
NOx
CO
O3
CO Standard
Std
NOx Standard
Std
16:00
16:15
16:30
16:45
17:00
1/2 Hour Standard
NOx .270 ppm
O3 .100 ppm
CO 5.20 ppm

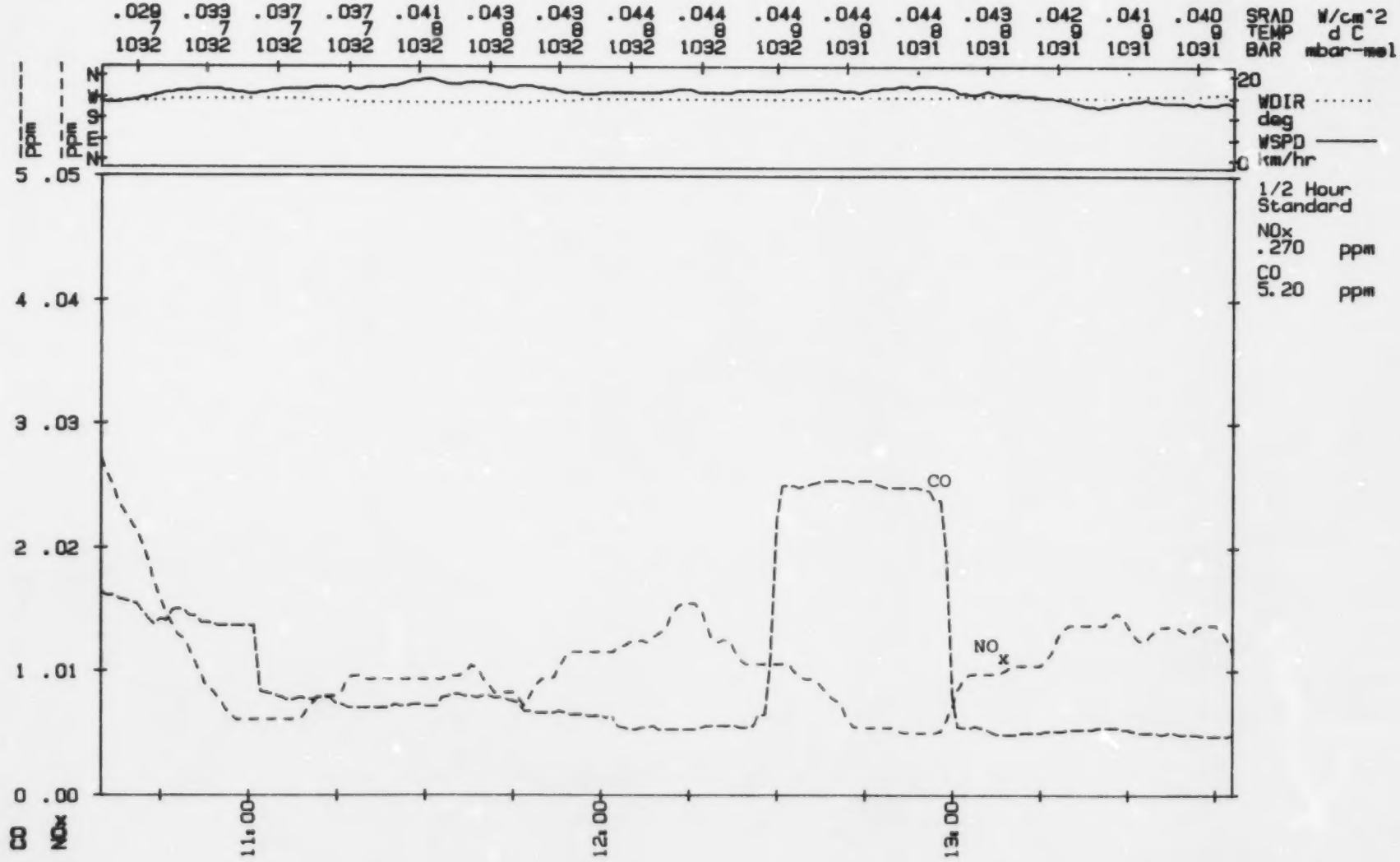
GRAPH #2

GRAPH # 3

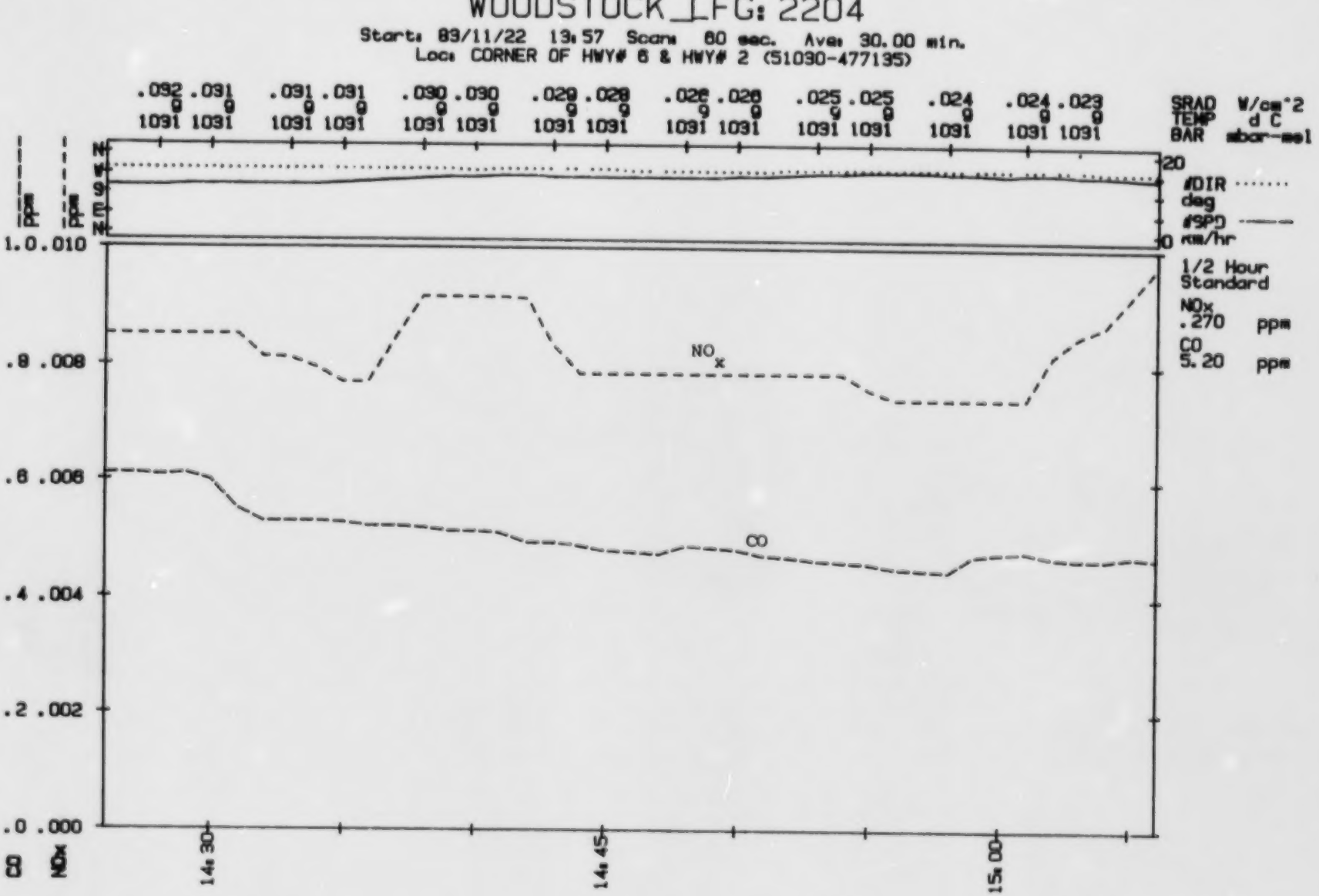

WOODSTOCK_LFG: 1101
Start: 83/11/11 10:33 Scan: 60 sec. Ave: 30.00 min.
Loc: ROAD #9, 2KM S LAFARGE (50920-476945)
SRAD w/m^2
TEMP d C
BAR mbar-mal
WDIR deg
WSPD km/hr
1/2 Hour Standard
NOx .270 ppm
O3 .100 ppm
CO 5.20 ppm
O3
CO
NOx
12:00
13:00

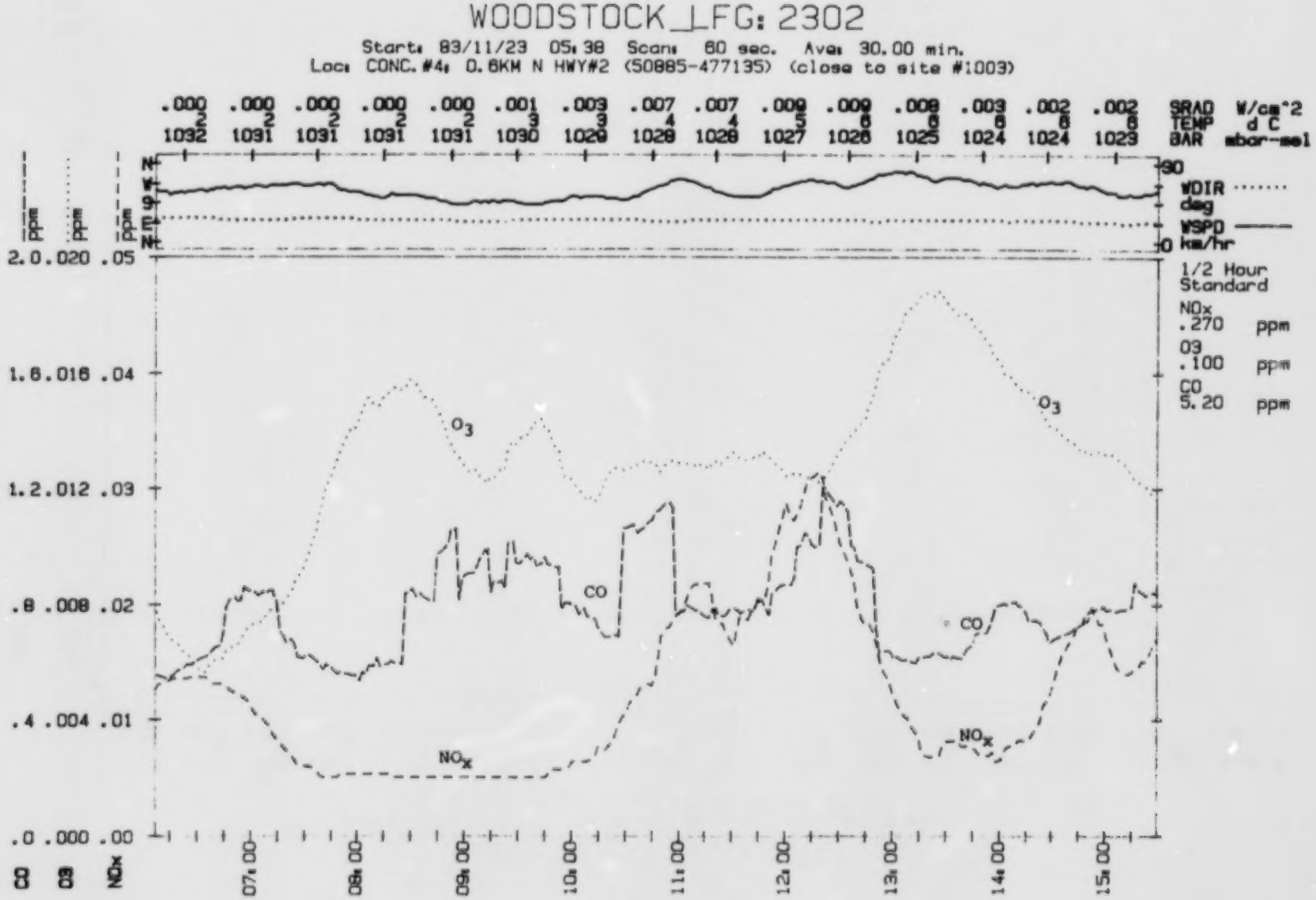

WOODSTOCK_LFG: 2202
Start: 83/11/22 09:10 Scan: 60 sec. Ave: 30.00 min.
Loc: 0.2KM S HWY# 2 ON GYPSUM RD (51170-477185)
.022 7 1032
.022 7 1032
.022 7 1032
.022 7 1032
.023 8 1032
.023 8 1032
.023 8 1032
.023 8 1032
.024 8 1032
.024 8 1032
.024 8 1032
.024 8 1032
SRAD W/cm^2
TEMP d C
BAR mbar-mol
N
W
S
E
N
20
WDIR
deg
WSPD
km/hr
0
Std
1/2 Hour Standard
NOx .270 ppm
O3 .100 ppm
CO 5.20 ppm
ppm
ppm
ppm
2.0 .10 .020
1.6 .08 .018
1.2 .06 .012
.8 .04 .008
.4 .02 .004
.0 .00 .000
CO O3 NOx
NOx
O3
CO
09:40
09:45
09:50

GRAPH # 4

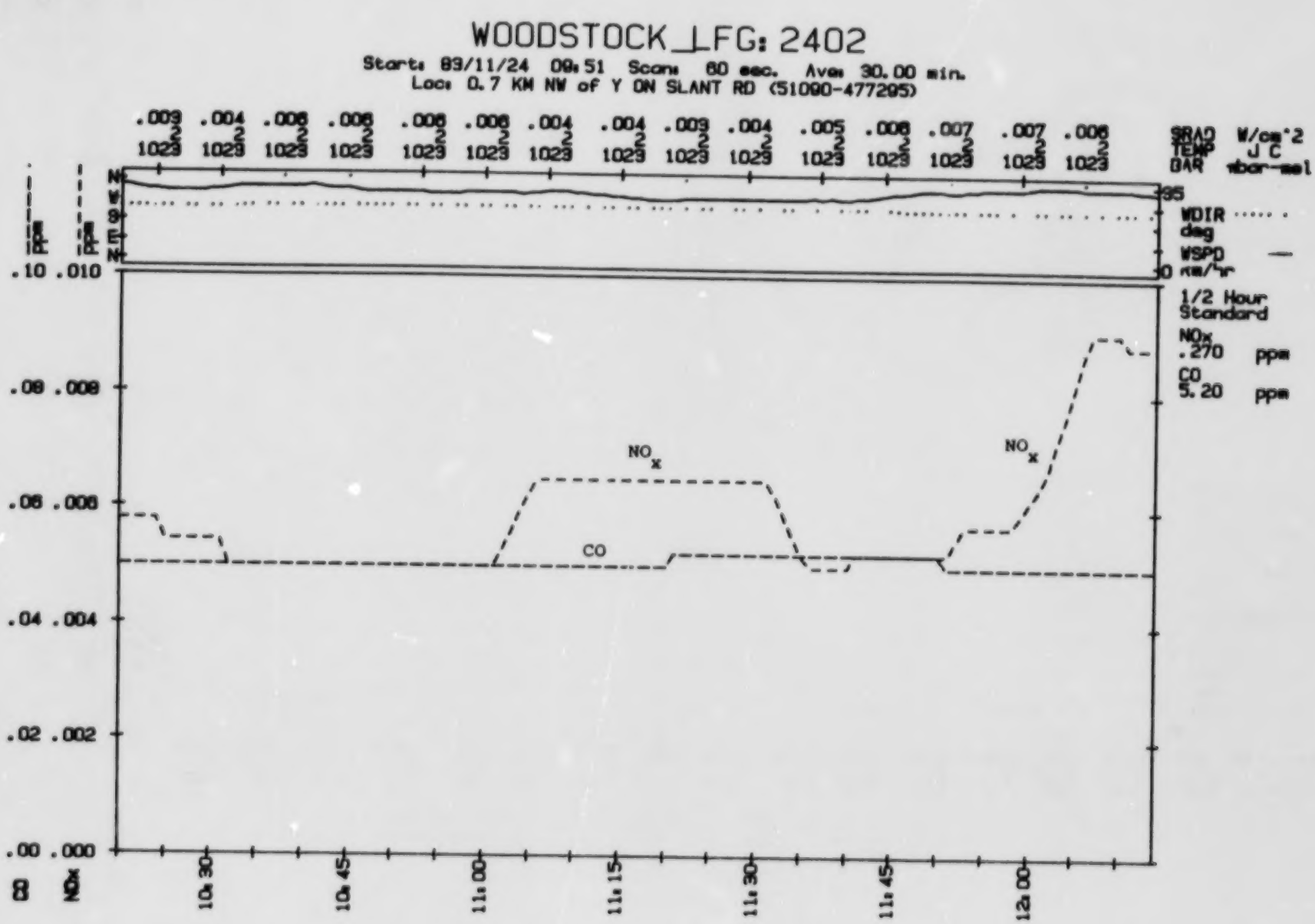

WOODSTOCK_LFG: 2203
Start: 83/11/22 10:06 Scan: 60 sec. Ave: 30.00 min.
Loc: HWY#6 ; 0.2KM N HWY#2 (51025-477165)
.029 .033 .037 .037 .041 .043 .043 .044 .044 .044 .044 .044 .043 .042 .041 .040 SRAD W/cm^2
7 7 7 7 8 8 8 8 8 9 9 8 8 9 9 9 TEMP d C
1032 1032 1032 1032 1032 1032 1032 1032 1032 1032 1031 1031 1031 1031 1031 1031 BAR mbar-mol
20
WDIR
deg
WSPD
km/hr
0
1/2 Hour
Standard
NOx
.270 ppm
CO
5.20 ppm
ppm
ppm
5 .05
4 .04
3 .03
2 .02
1 .01
0 .00
CO
NOx
11:00
12:00
13:00

GRAPH # 5

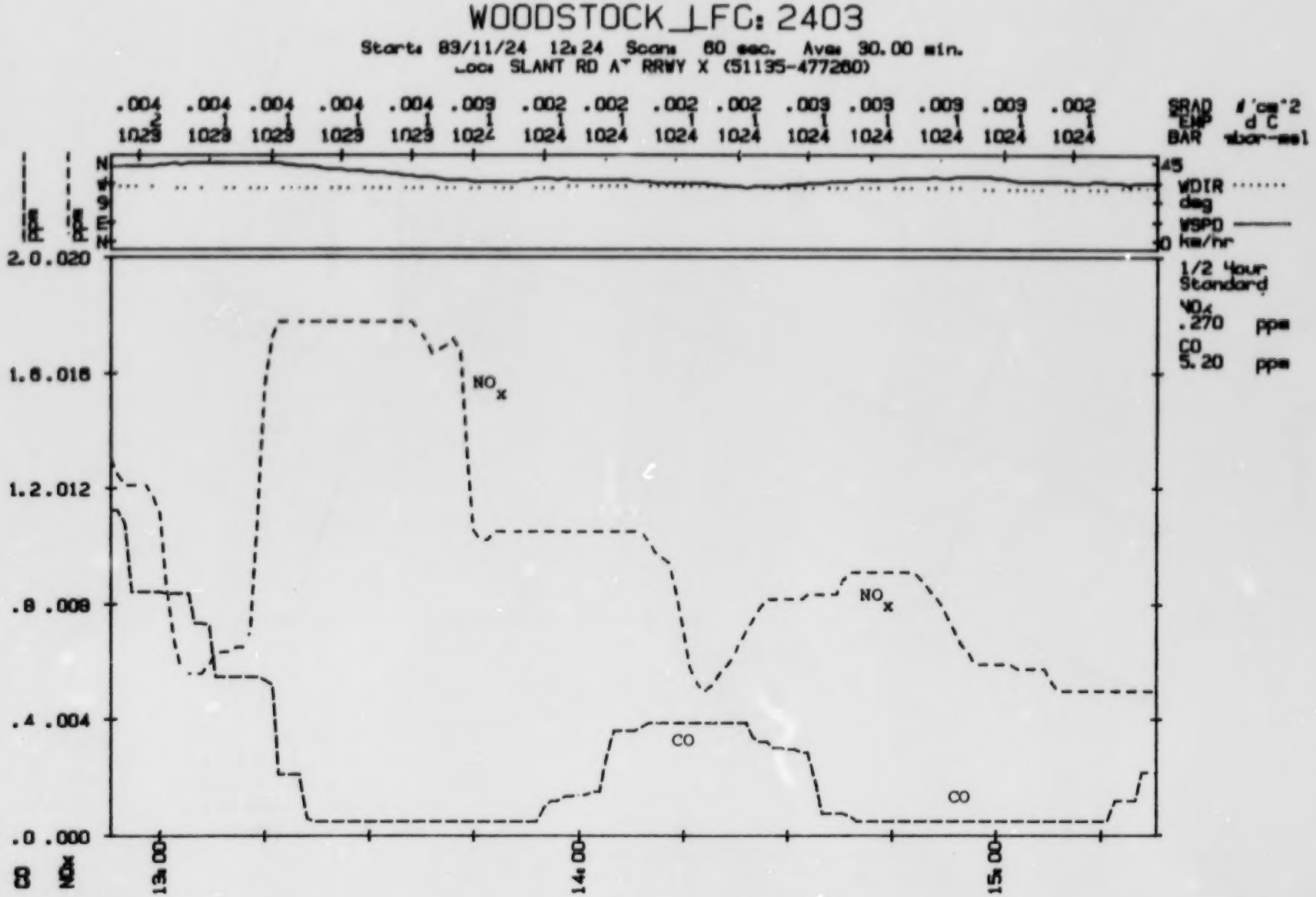

WOODSTOCK_LFG: 2204
Start: 89/11/22 13:57 Scan: 60 sec. Ave: 30.00 min.
Loc: CORNER OF HWY# 6 & HWY# 2 (51030-477135)
.092 .091 .091 .091 .090 .090 .029 .028 .026 .026 .025 .025 .024 .024 .023
1091 1091 1091 1091 1091 1091 1091 1091 1091 1091 1091 1091 1091 1091 1091
SRAD W/cm^2
TEMP d C
BAR mbar-sel
#DIR
deg
#SPD
km/hr
20
0
1.0.010
.8 .008
.6 .006
.4 .004
.2 .002
.0 .000
NOx
CO
14:30
14:45
15:00
1/2 Hour Standard
NOx .270 ppm
CO 5.20 ppm
GRAPH # 6


WOODSTOCK_LFG: 2302
Start: 83/11/23 05:38 Scan: 60 sec. Ave: 30.00 min.
Loc: CONC. #4: 0.6KM N HWY#2 (50885-477135) (close to site #1003)
SRAD W/cm^2
TEMP d C
BAR mbar-sel
WDIR deg
WSPD km/hr
1/2 Hour Standard
NOx .270 ppm
O3 .100 ppm
CO 5.20 ppm
O3
CO
NOx
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00

GRAPH #7


WOODSTOCK_LFG: 2402
Start: 89/11/24 09:51 Scan: 60 sec. Ave: 30.00 min.
Loc: 0.7 KM NW of Y ON SLANT RD (51090-477295)
.003 .004 .006 .006 .006 .006 .004 .004 .003 .004 .005 .006 .007 .007 .006
1023 1023 1023 1023 1023 1023 1023 1023 1023 1023 1023 1023 1023 1023 1023
SRAD W/cm^2
TEMP J C
BAR mbar-mol
WDIR
deg
WSPD
km/hr
35
0
1/2 Hour Standard
NOx .270 ppm
CO 5.20 ppm
.10 .010
.08 .008
.06 .006
.04 .004
.02 .002
.00 .000
NO x
CO
10:30
10:45
11:00
11:15
11:30
11:45
12:00

GRAPH # 8


WOODSTOCK_LFC: 2403
Start: 89/11/24 12:24 Scan: 60 sec. Ave: 30.00 min.
Loc: SLANT RD AT RRWY X (51135-477280)
.004 .004 .004 .004 .004 .003 .002 .002 .002 .002 .003 .003 .003 .003 .002
1023 1023 1023 1023 1023 1024 1024 1024 1024 1024 1024 1024 1024 1024 1024
SRAD
TEMP
BAR
WDIR
deg
WSPD
km/hr
45
0
1/2 Hour Standard
NO2 .270 ppm
CO 5.20 ppm
2.0.020
1.6.016
1.2.012
.8 .008
.4 .004
.0 .000
NOx
CO
13:00
14:00
15:00

GRAPH # 9

WOODSTOCK_LFG: 1003

Start: 83/11/10 10:56 Scan: 60 sec. Ave: 30.0 min. Duration: 3.5 hrs.
Loc: CONC. #4: 0.3KM N HWY#2 (50895-477130)

WINDS Blowing From
1 Division = 10% of Time
Calm (< 3 km/hr) = .0%
Low (< 3 km/hr) = .0%
High (> 30 km/hr) = .0%

WINDROSE # 1

WOODSTOCK_LFG: 1004

Start: 83/11/10 15:24 Scan: 60 sec. Ave: 30.0 min. Duration: 1.7 hrs.
Loc: NW OF LAFARGE ON CONC.#4 (50875-477185)

WINDS Blowing From
1 Division = 10% of Time
Calm (< 3 km/hr) = .0%
Low (< 3 km/hr) = .0%
High (> 25 km/hr) = .0%

WINDROSE # 2

WOODSTOCK_LFG: 1101

Start: 83/11/11 10:33 Scan: 60 sec. Ave: 30.0 min. Duration: 2.7 hrs.
Loc: ROAD #9, 2KM S LAFARGE (50920-476945)

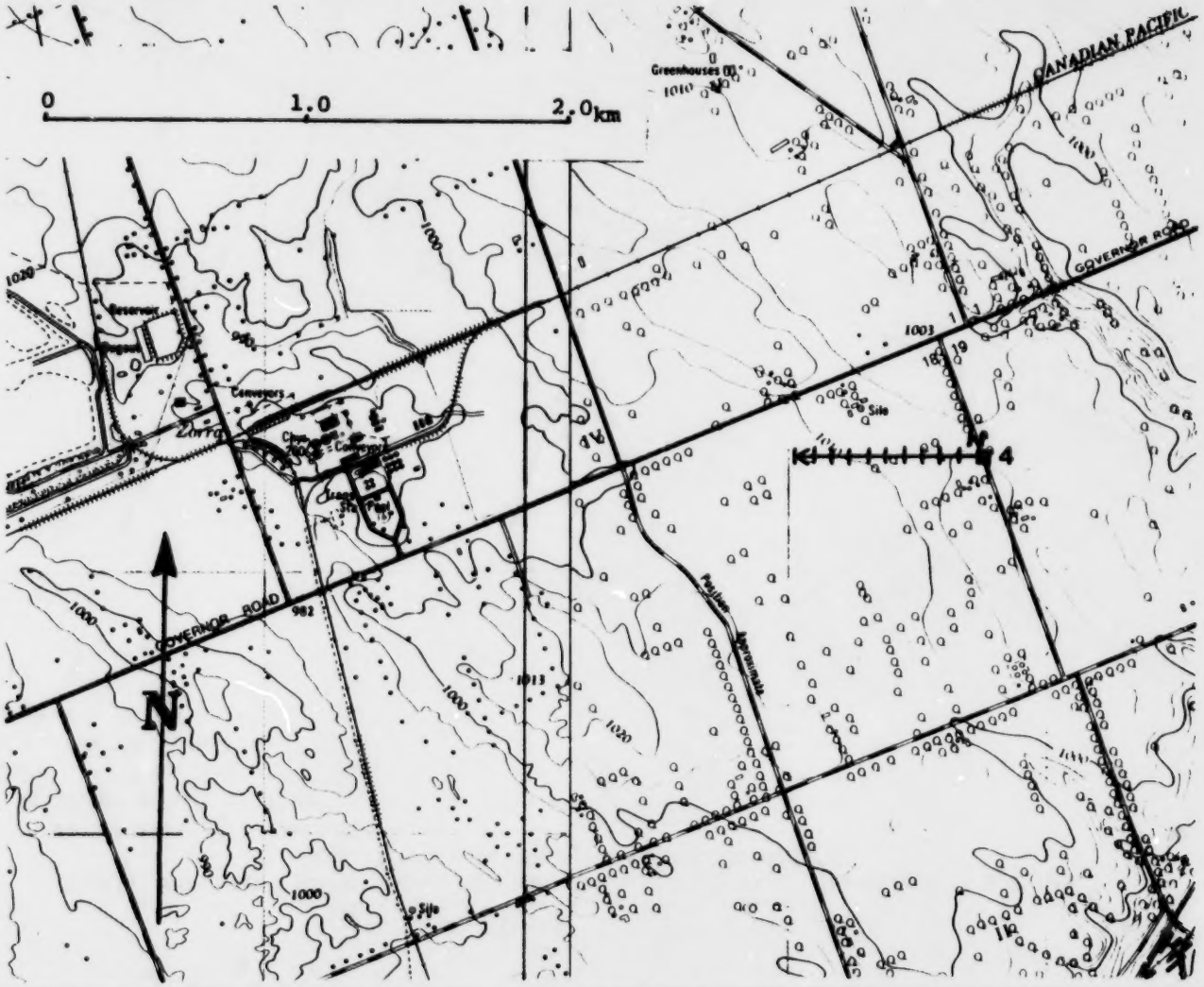
WINDS Blowing From
1 Division = 10% of Time
Calm (< 3 km/hr) = .0%
Low (< 3 km/hr) = .0%
High (> 45 km/hr) = .0%

WINDROSE # 3

WOODSTOCK_LFG: 2202

Start: 83/11/22 09:10 Scan: 60 sec. Ave: 30.0 min. Duration: .7 hrs.
Loc: 0.2KM S HWY# 2 ON GYPSUM RD (51170-477185)

WINDS Blowing From
1 Division = 10% of Time
Calm (< 3 km/hr) = .0%
Low (< 3 km/hr) = .0%
High (> 20 km/hr) = .0%



WINDROSE # 4

WOODSTOCK_LFG: 2203

Start: 89/11/22 10:06 Scan: 60 sec. Ave: 30.0 min. Duration: 3.7 hrs.
Loc: HWY#6 : 0.2KM N HWY#2 (51025-477165)

WINDS Blowing From
1 Division = 10% of Time
Calm (< 3 km/hr) = .0%
Low (< 3 km/hr) = .0%
High (> 20 km/hr) = .0%

WINDROSE # 5

WOODSTOCK_LFG: 2204

Start: 83/11/22 13:57 Scan: 60 sec. Ave: 30.0 min. Duration: 1.2 hrs.
Loc: CORNER OF HWY# 6 & HWY# 2 (51030-477135)

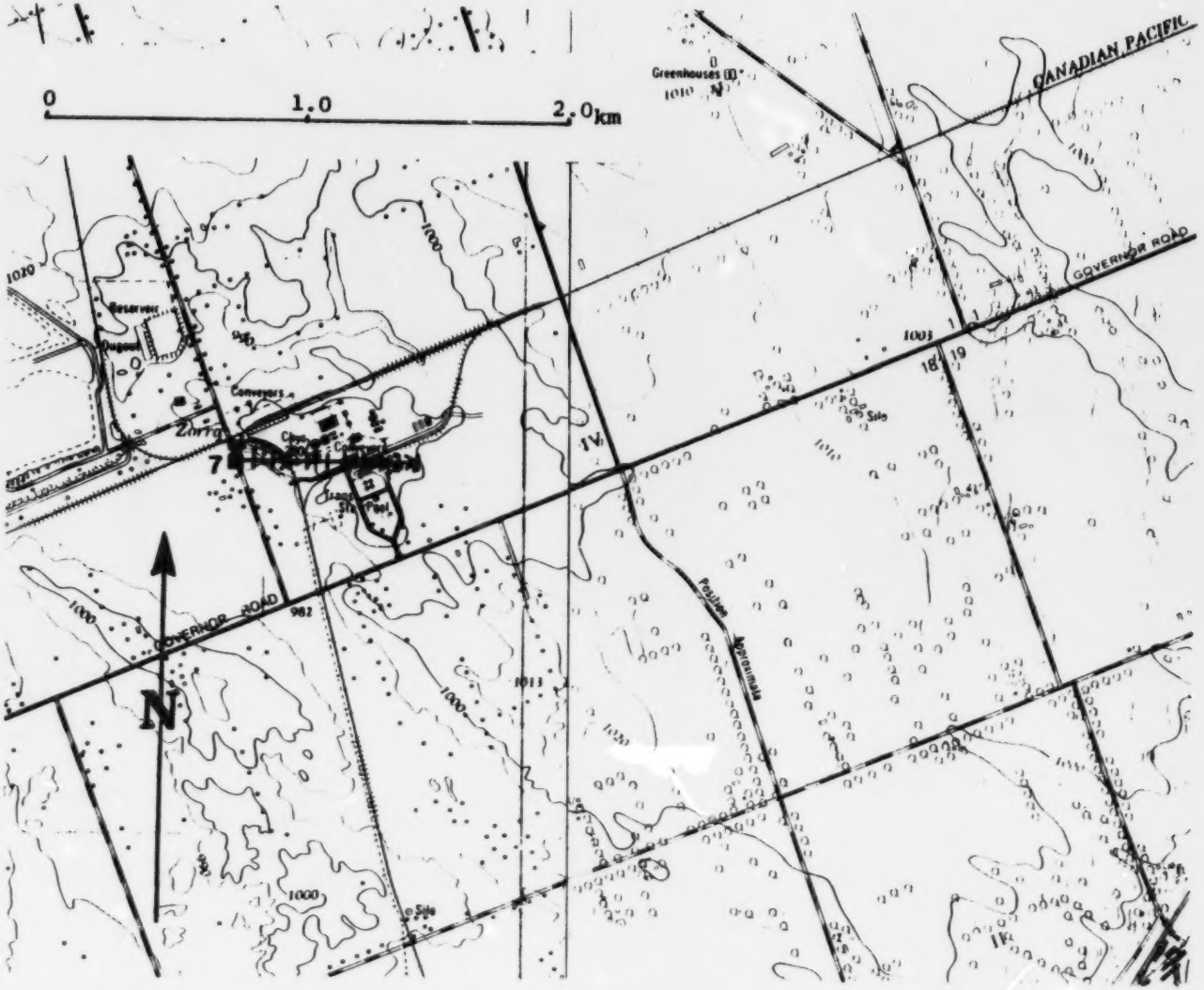
WINDS Blowing From
1 Division = 10% of Time
Calm (< 3 km/hr) = .0%
Low (< 3 km/hr) = .0%
High (> 20 km/hr) = .0%

WINDROSE # 6

WOODSTOCK_LFG: 2302

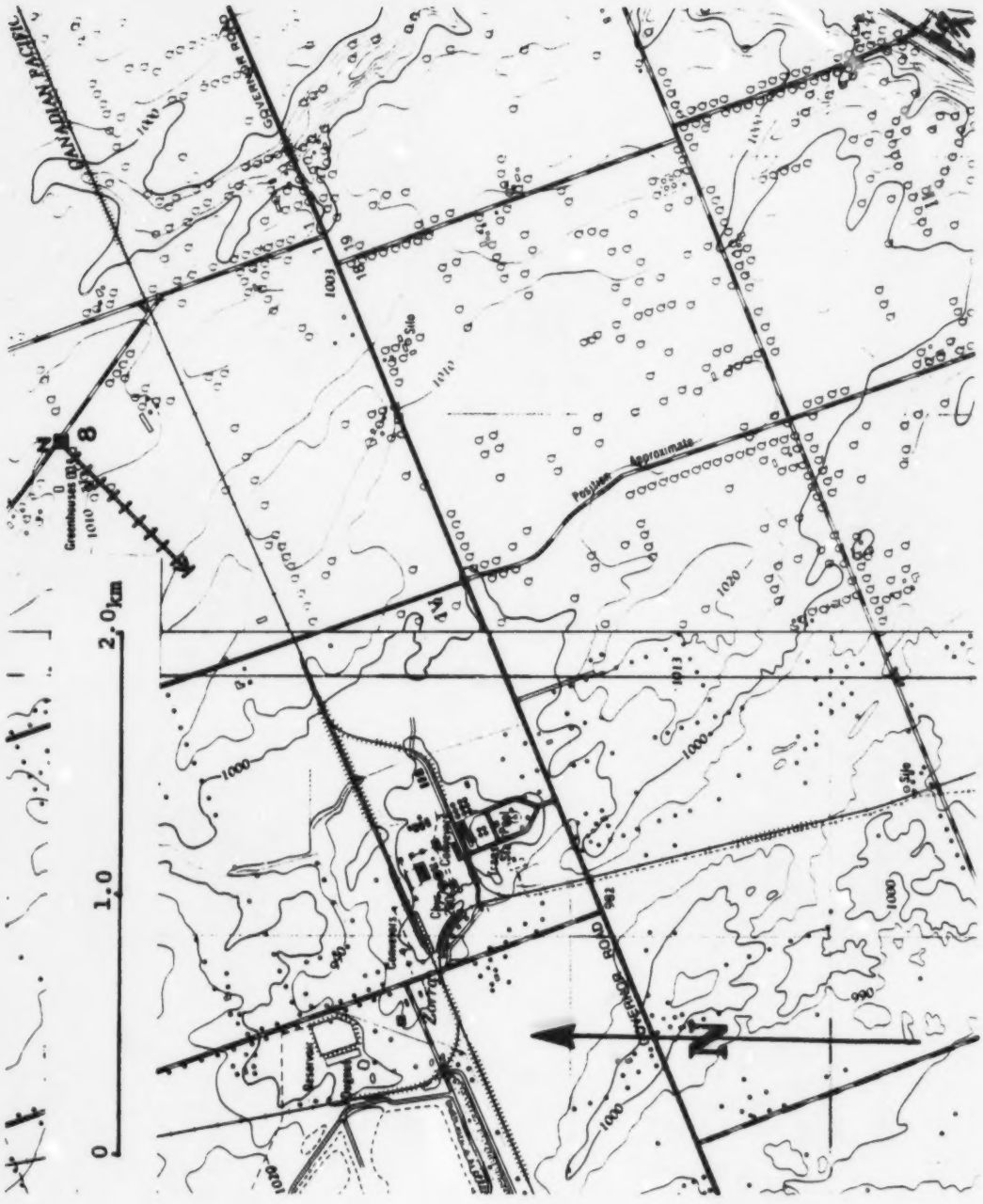
Start: 83/11/23 05:38 Scan: 60 sec. Ave: 30.0 min. Duration: 9.9 hrs.
Loc: CONC.#4: 0.6KM N HWY#2 (5C885-477:35) (close to site #:003)

WINDS Blowing From
1 Division = 10% of Time
Calm (< 3 km/hr) = .0%
Low (< 3 km/hr) = .0%
High (> 30 km/hr) = .0%



WINDROSE # 7

WINDROSE # 8


WOODSTOCK_LFG: 2402
Start: 83/11/24 09:51 Scan: 60 sec. Avg: 30.0 min. Duration: 2.4 hrs.
Loc: 0.7 KM NW of Y ON SLANT RD (510900-477295)
WINDS Blowing From
1 Division = 10% of Time
Calm (< 3 km/hr) = .0%
Lor (< 3 km/hr) = .0%
High (> 35 km/hr) = .0%
0
1.0
2.0km
CANADIAN PACIFIC
GOVERNOR ROAD
Proposed Approximate
Greenhouses
Zoning
N

WOODSTOCK_LFG: 2403

Start: 83/11/24 12:24 Scan: 60 sec. Ave: 30.0 min. Duration: 3.0 hrs.
Loc: SLANT RD AT RRWY X (51135-477260)

WINDS Blowing From
1 Division = 10% of Time
Calm (< 3 km/hr) = .0%
Low (< 3 km/hr) = .0%
High (> 50 km/hr) = .0%

WINDROSE # 9

Start: 83/11/10 10:56 Scan: 00 sec
Average: 30.00 min Report: 5.00 min
Loc: CONC.#4: 0.3KM N HWY#2 (50695-47713W)

Time	CO Wind-Dir	SO2	NOx	NO2	HC	Ozone	Sol-rRad	Temp	Barom	Wind-Spd
10:55-11:25	.7 138.	nd	nd	nd	nd	.01	.021	12.0	1021.7	7.
11:00-11:30	.6 149.	nd	nd	nd	nd	.01	.020	12.0	1021.7	7.
11:05-11:35	.7 154.	nd	nd	nd	nd	.01	.020	12.0	1021.6	12.
11:10-11:40	.8 157.	nd	nd	nd	nd	.01	.021	12.0	1021.5	7.
11:15-11:45	.9 160.	nd	nd	nd	nd	.01	.021	12.0	1021.4	7.
11:20-11:50	.9 162.	nd	nd	nd	nd	.01	.021	12.0	1021.3	12.
11:25-11:55	.9 161.	nd	nd	nd	nd	.01	.021	12.0	1021.	7.
11:30-12:00	1.1 165.	nd	nd	nd	nd	.01	.022	12.0	1021.0	4.
11:35-12:05	.9 167.	nd	nd	nd	nd	.01	.022	12.0	1021.	5.
11:40-12:10	1.1 169.	nd	nd	nd	nd	.01	.022	12.0	1020.9	5.
11:45-12:15	1.1 169.	nd	nd	nd	nd	.01	.022	11.9	1020.8	15.
11:50-12:20	1.1 169.	nd	nd	nd	nd	.01	.022	11.9	1020.7	17.
11:55-12:25	1.1 171.	nd	nd	nd	nd	.01	.021	11.9	1020.6	13.
12:00-12:30	.9 170.	.01	nd	nd	nd	.01	.021	11.9	1020.5	14.
12:05-12:35	.9 170.	.01	nd	nd	nd	.01	.021	11.9	1020.4	14.
12:10-12:40	.8 170.	.02	nd	nd	nd	.01	.021	12.0	1020.2	14.

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
12:15-12:45	.7 1e7.	.02	nd	nd	nd	.01	.020	12.8	1020.1	13.
12:20-12:50	.6 1e4.	.02	.05	nd	.05	.01	.020	12.8	1020.1	14.
12:25-12:55	1.0 1e4.	.02	.18	nd	.17	.01	.019	12.8	1020.0	14.
12:30-13:00	1.4 1e3.	.01	.34 •	.01	.33	.01	.019	11.9	1020.0	15.
12:35-13:05	1.6 1e3.	.01	.33 •	.02	.31	.01	.018	11.9	1019.9	15.
12:40-13:10	2.1 1e4.	nd	.75 •	.03	.72	.01	.018	11.8	1019.9	15.
12:45-13:15	2.5 1e3.	nd	.98 •	.04	.94	.01	.018	11.8	1019.8	15.
12:50-13:20	3.1 1e7.	nd	1.17 •	.05	1.11	.01	.018	11.8	1019.7	14.
12:55-13:25 •	3.0 1e5.	nd	1.27 •	.05	1.21	.01	.017	11.9	1019.6	14.
13:00-13:30	3.5 1e3.	nd	1.34 •	.06	1.27	.01	.016	11.9	1019.5	13.
13:05-13:35	4.1 1e3.	nd	1.40 •	.06	1.33	.01	.015	12.0	1019.3	13.
13:10-13:40	4.6 1e0.	.01	1.45 •	.06	1.38	.01	.014	12.0	1019.2	13.
13:15-13:45	4.9 1e0.	.01	1.49 •	.07	1.41	.01	.009	12.0	1019.1	13.
13:20-13:50	5.2 • 159.	.01	1.51 •	.07	1.43	.01	.007	12.0	1019.0	14.
13:25-13:55	5.9 • 1e0.	.02	1.54 •	.07	1.45	.01	.007	12.0	1019.0	14.
13:30-14:00	6.7 • 1e0.	.02	1.55 •	.07	1.47	.01	.007	11.9	1018.9	14.
13:35-14:05	6.7 • 157.	.01	1.54 •	.07	1.45	.01	.007	11.9	1018.8	14.

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Baron	Wind-Spd
13:40-14:10	0.6 * 155.	.01	1.49 *	.00	1.42	.01	.007	11.9	1013.7	14.
13:45-14:15	0.6 * 153.	.01	1.45 *	.00	1.38	.00	.007	11.9	1013.6	13.
13:50-14:20	0.8 * 154.	nd	1.42 *	.00	1.35	.00	.007	11.9	1013.5	13.
13:55-14:25	7.1 * 153.	nd	1.40 *	.00	1.33	.00	.007	11.9	1013.3	13

Statistics	CO Wind-Dir	SO2	NOx	NO2	HC	Ozone	SolarRad	Temp	Baros	Wind-Spd
Units	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm 2	d C	mbar-sal	Km/h
Arith. Mean	2.87 -	.009	.033	.029	.081	.005	.0182	11.3	1020.4	-
Std. Dev.	3.39 -	.006	.092	.027	.035	.002	.0056	.1	..1	-
Geo. Mean	1.64 -	.008	.067	.015	.069	.005	-	-	-	-
Geo.Std.Dev	2.93 -	1.758	16.174	3.381	15.488	1.013	-	-	-	-
Min Reading	.05 Sa.7	.005	.005	.005	.005	.002	.0054	11.7	1017.3	2.5
Max Reading	27.0a 193.7	.024	1.632	.078	1.540	.012	.0263	12.2	1021.3	21.1
Min Average	.57 178.1	.005	.005	.005	.005	.004	.0056	11.8	1018.2	7.4
Max Average	7.0a 174.8	.016	1.334	.068	1.471	.009	.0234	12.0	1021.7	15.5
# Valid Reqs	211. 211.	211.	211.	211.	211.	211.	211.	211.	211.	211.
Min.Det.Lev	.10 -	.010	.010	.010	.010	.004	-	-	950.0	-
1/2hr Std	5.20 -	.300	.270	-	-	.100	-	-	-	-

- Invalid Data / Not Calculated
nd Average is less than Min. Detectable Level
a One or more readings Missing
* Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
Averaging Started at Nearest: .0 min

Start: 87/11/10 15:24 Scan: 60 sec
Average: 30.00 min Report: 5.00 min
Loc: NW OF LAFARGE ON CONC.44 (5687S-4771oE)

Time	CO Wind-Dir	SO2	NOx	NO2	O3	Ozone	SolarRad	Temp	Baron	Wind-Spd
15:23-15:53	9.0 • 105.	nd	1.50 •	.05	1.42	nd	.003	10.8	1016.1	10.
15:28-15:58	8.5 • 99.	nd	1.46 •	.05	1.39	nd	.002	10.8	1016.1	10.
15:33-16:03	8.0 • 94.	nd	1.43 •	.05	1.36	nd	.001	10.7	1016.1	11.
15:38-16:08	7.7 • 91.	nd	1.41 •	.04	1.33	nd	.001	10.5	1016.0	12.
15:43-16:13	7.7 • 90.	nd	1.38 •	.04	1.31	nd	.000	10.4	1016.0	12.
15:48-16:18	7.7 • 87.	nd	1.34 •	.04	1.27	nd	.000	10.3	1016.0	12.
15:53-16:23	7.8 • 85.	nd	1.32 •	.04	1.25	nd	.000	10.2	1015.9	12.
15:58-16:28	7.8 • 85.	nd	1.31 •	.04	1.24	nd	.000	10.1	1015.9	13.
16:03-16:33	7.8 • 83.	nd	1.30 •	.04	1.23	nd	.000	10.1	1015.9	13.
16:08-16:38	7.8 • 80.	nd	1.29 •	.04	1.22	nd	.000	10.0	1015.9	13.
16:13-16:43	10.4 • 89.	nd	1.28 •	.04	1.22	nd	.000	9.9	1015.9	14.
16:18-16:48	10.5 • 89.	nd	1.31 •	.04	1.24	nd	.000	9.9	1015.9	13.
16:23-16:53	10.5 • 78.	nd	1.32 •	.04	1.25	nd	.000	9.8	1015.1	13.
16:28-16:58	10.6 • 77.	nd	1.31 •	.04	1.24	nd	.000	9.8	1015.1	13.
16:33-17:03	10.7 • 77.	nd	1.29 •	.04	1.22	nd	.000	9.7	1015.5	12.

Statistics	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
Units	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm 2	d C	mbar-msl	km/h
Arith. Mean	9.96 -	.000	1.302	.042	1.290	.002	.0010	10.2	1015.7	-
Std. Dev.	.72 -	.002	.111	.006	.103	.001	.0017	.5	1.1	-
Geo. Mean	9.93 -	.005	1.358	.042	1.286	.002	-	-	-	-
Geo.Std.Dev	1.09 -	1.292	1.084	1.158	1.082	1.230	-	-	-	-
Min Reading	9.19 69.4	.005	1.134	.027	1.081	.002	.0000	9.6	1006.4	4.7
Max Reading	13.72 139.5	.016	1.594	.054	1.504	.005	.0067	11.0	1016.3	18.2
Min Average	9.54 77.1	.005	1.285	.038	1.216	.002	.0000	9.7	1015.1	9.9
Max Average	10.68 105.0	.007	1.500	.049	1.417	.002	.0029	10.3	1016.1	13.7
# Valid Rdgs	100. 100.	100.	100.	100.	100.	100.	100.	100.	100.	100.
Min.Det.Lev	.10 -	.010	.010	.010	.010	.004	-	-	950.0	-
1/2hr Std	5.20 -	.300	.270	-	-	.100	-	-	-	-

- Invalid Data / Not Calculated
nd Average is less than Min. Detectable Level
One or more readings Missing
* Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
Averaging Started at Nearest: .0 min

Start: 83/11/11 10:33 Scan: 60 sec
Average: 30.00 min Report: 5.00 min
Loc: ROAD #9: 2KM S LAFARGE (5092Ø-476945)

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Berom	Wind-Spd
10:32-11:02	.7 4.	nd	nd	nd	nd	nd	.004	- 4	1010.3	37.
10:37-11:07	.7 5.	nd	nd	nd	nd	nd	.005	-.5	1010.3	37.
10:42-11:12	.6 7.	nd	.01	nd	.01	nd	.005	-.5	1010.4	39.
10:47-11:17	.5 8.	nd	.01	nd	.02	nd	.005	-.6	1010.4	40.
10:52-11:22	.5 7.	nd	.01	nd	.01	nd	.006	-.6	1010.4	40.
10:57-11:27	.5 6.	nd	.01	nd	.01	nd	.006	-.7	1010.5	40.
11:02-11:32	.5 8.	nd	.01	nd	.01	nd	.007	-.7	1010.5	40.
11:07-11:37	.5 8.	nd	.01	nd	.02	nd	.007	-.7	1010.5	39.
11:12-11:42	.5 6.	nd	nd	nd	.01	nd	.008	-.8	1010.6	37.
11:17-11:47	.5 6.	nd	nd	nd	nd	nd	.008	-.8	1010.6	34.
11:22-11:52	.5 6.	nd	nd	nd	nd	nd	.009	-.8	1010.7	32.
11:27-11:57	.5 6.	nd	nd	nd	nd	nd	.009	-.8	1010.7	32.
11:32-12:02	.5 5.	nd	nd	nd	nd	nd	.009	-.9	1010.8	28.
11:37-12:07	.5 3.	.01	nd	nd	nd	nd	.007	-.9	1010.8	27.
11:42-12:12	.5 3.	.01	nd	nd	nd	nd	.007	-1.0	1010.9	27.
11:47-12:17	.5 3.	.01	nd	nd	nd	nd	.006	-1.2	1010.9	28.

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
11:52-12:22	.5 2.	.02	nd	nd	nd	.00	.000	-1.3	1010.7	30.
11:57-12:27	.5 2.	.02	nd	nd	nd	.01	.000	-1.4	1011.0	30.
12:02-12:32	.5 2.	.02	nd	nd	nd	.01	.000	-1.5	1011.0	32.
12:07-12:37	.5 0.	.02	nd	nd	nd	.01	.000	-1.6	1011.0	33.
12:12-12:42	.5 0.	.02	nd	nd	nd	.01	.000	-1.7	1011.1	34.
12:17-12:47	.5 1.	.02	nd	nd	nd	.01	.007	-1.7	1011.1	35.
12:22-12:52	.5 1.	.02	nd	nd	nd	.01	.007	-1.7	1011.1	35.
12:27-12:57	.5 360.	.02	nd	nd	nd	.01	.007	-1.7	1011.2	35.
12:32-13:02	.5 360.	.02	nd	nd	nd	.01	.007	-1.7	1011.2	36.
12:37-13:07	.5 0.	.02	nd	nd	nd	.01	.007	-1.8	1011.3	36.
12:42-13:12	.5 360.	.02	nd	nd	nd	.01	.000	-1.8	1011.3	34.

Statistics	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
Units	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm^2	d C	mbar-msl	km/h
Arith. Mean	.54 -	.011	.007	.005	.008	.004	.0062	-1.1	1010.8	-
Std. Dev.	.25 -	.006	.006	.000	.008	.003	.0016	.5	.4	-
Geo. Mean	.51 -	.010	.006	.005	.007	.004	-	-	-	-
Geo.Std.Dev	1.37 -	1.822	1.514	1.000	1.783	1.873	-	-	-	-
Min Reading	.05 .0	.005	.005	.005	.005	.002	.0027	-1.8	1010.1	15.3
Max Reading	2.34 359.7	.020	.050	.005	.052	.015	.0104	-.1	1011.6	57.8
Min Average	.46 .3	.005	.005	.005	.005	.002	.0040	-1.8	1010.3	26.6
Max Average	.71 359.6	.018	.013	.005	.017	.008	.0085	-.4	1011.2	48.1
# Valid Rdgs	164. 164.	164.	164.	164.	164.	164.	164.	164.	164.	164.
Min.Det.Lev	.10 -	.010	.010	.010	.010	.004	-	-	750.3	-
1/2hr Std	5.20 -	.300	.270	-	-	.100	-	-	-	-

- Invalid Data / Not Calculated
nd Average is less than Min. Detectable Level
n One or more readings Missing
* Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
Averaging Started at Nearest: .0 min

Start: 83/11/22 09:10 Scan: 60 sec
Average: 30.00 min Report: 5.00 min
Loc: 0.2KM S HWY# 2 ON GYPSUM RD (51170-47716)

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
09:09-09:39	1.3 258.	nd	nd	nd	nd	.04	.022	7.1	1031.8	13.
09:14-09:44	1.1 261.	nd	.01	nd	nd	.05	.023	7.5	1031.8	13.
09:19-09:49	1.0 262.	nd	.02	nd	.01	.07	.024	7.8	1031.8	16.

Statistics	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
Units	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm**2	d C	mbar-msl	km/h
Arith. Mean	1.15 -	.005	.015	.005	.010	.058	.0231	7.3	1031.8	-
Std. Dev.	1.22 -	.000	.009	.000	.007	.047	.0026	.9	.7	-
Geo. Mean	.92 -	.005	.012	.005	.008	.041	-	-	-	-
Geo.Std.Dev	1.74 -	1.000	1.976	1.000	1.866	2.671	-	-	-	-
Min Reading	.49 216.3	.005	.005	.005	.005	.002	.0191	5.2	1031.5	8.4
Max Reading	7.38 275.1	.005	.030	.005	.021	.201	.0275	8.1	1031.9	21.6
Min Average	1.02 258.0	.005	.009	.005	.006	.044	.0219	7.1	1031.8	13.3
Max Average	1.31 262.4	.005	.015	.005	.011	.074	.0238	7.8	1031.8	15.3
# Valid Rdgs	43. 43.	43.	43.	43.	43.	43.	43.	43.	43.	43.
Min.Det.Lev	.10 -	.010	.010	.010	.010	.004	-	-	750.0	-
1/2hr Std	5.20 -	.300	.270	-	-	.100	-	-	-	-

- Invalid Data / Not Calculated
nd Average is less than Min. Detectable Level
m One or more readings Missing
* Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
Averaging Started at Nearest: .0 min

WOODSTOCK_LFG : 2203

Start: 83/11/22 10:00 Scan: 60 sec
Average: 30.00 min Report: 5.00 min
Loc: HW#6 : 0.2KM N HW#2 (510025-477165)

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Baron	Wind-Spd
10:05-10:35	1.6 253.	nd	.03	nd	.02	-	.027	6.7	1031.9	14.
10:10-10:40	1.6 252.	nd	.02	nd	.02	-	.029	6.8	1031.9	14.
10:15-10:45	1.4 255.	nd	.02	nd	.01	-	.030	6.8	1031.9	16.
10:20-10:50	1.5 256.	nd	.01	nd	nd	-	.032	6.8	1031.9	16.
10:25-10:55	1.4 256.	nd	nd	nd	nd	-	.034	6.9	1031.9	17.
10:30-11:00	1.4 256.	nd	nd	nd	nd	-	.036	7.1	1031.9	16.
10:35-11:05	.8 256.	nd	nd	nd	nd	-	.037	7.3	1031.8	16.
10:40-11:10	.8 256.	nd	nd	nd	nd	-	.036	7.3	1031.8	17.
10:45-11:15	.7 251.	.01	nd	nd	nd	-	.036	7.3	1031.8	17.
10:50-11:20	.7 245.	nd	nd	nd	nd	-	.038	7.6	1031.8	17.
10:55-11:25	.7 245.	nd	nd	nd	nd	-	.040	7.8	1031.8	16.
11:00-11:30	.7 242.	nd	nd	nd	nd	-	.041	8.1	1031.8	19.
11:05-11:35	.8 241.	nd	nd	nd	nd	-	.042	8.3	1031.8	18.
11:10-11:40	.8 242.	nd	nd	nd	nd	-	.043	8.5	1031.8	18.
11:15-11:45	.8 246.	nd	nd	nd	nd	-	.043	8.4	1031.7	17.
11:20-11:50	.7 250.	nd	nd	nd	nd	-	.043	8.3	1031.7	17.

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
11:25-11:55	.7 255.	.01	.01	nd	nd	-	.043	8.3	1031.7	16.
11:30-12:00	.6 260.	.02	.01	nd	nd	-	.043	8.2	1031.7	16.
11:35-12:05	.5 262.	.02	.01	nd	nd	-	.044	8.1	1031.7	16.
11:40-12:10	.5 261.	.02	.01	nd	.01	-	.044	8.1	1031.7	16.
11:45-12:15	.5 259.	.03	.02	nd	.01	-	.044	8.2	1031.7	17.
11:50-12:20	.6 261.	.02	.01	nd	nd	-	.044	8.3	1031.7	16.
11:55-12:25	.5 261.	.02	.01	nd	nd	-	.044	8.4	1031.6	16.
12:00-12:30	2.2 260.	.02	.01	nd	nd	-	.044	8.5	1031.6	16.
12:05-12:35	2.5 261.	.02	nd	nd	nd	-	.044	8.6	1031.5	17.
12:10-12:40	2.5 265.	.01	nd	nd	nd	-	.044	8.6	1031.5	17.
12:15-12:45	2.5 269.	nd	nd	nd	nd	-	.044	8.6	1031.4	16.
12:20-12:50	2.5 268.	nd	nd	nd	nd	-	.044	8.5	1031.3	17.
12:25-12:55	2.5 268.	nd	nd	nd	nd	-	.044	8.5	1031.3	18.
12:30-13:00	.8 270.	nd	nd	nd	nd	-	.043	8.5	1031.3	17.
12:35-13:05	.5 270.	nd	nd	nd	nd	-	.043	8.5	1031.3	16.
12:40-13:10	.5 272.	.01	.01	nd	nd	-	.043	8.4	1031.2	16.
12:45-13:15	.5 269.	.01	.01	nd	nd	-	.042	8.3	1031.2	15.

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
12:50-13:20	.5 268.	.02	.01	nd	nd	-	.042	8.6	1031.2	.4.
12:55-13:25	.5 268.	.02	.01	nd	nd	-	.041	8.7	1031.2	.3.
13:00-13:30	.5 270.	.02	.01	nd	nd	-	.041	8.7	1031.2	14.
13:05-13:35	.5 273.	.01	.01	nd	nd	-	.041	8.6	1031.1	14.
13:10-13:40	.5 274.	.01	.01	nd	nd	-	.040	8.5	1031.1	14.
13:15-13:45	.5 278.	.01	.01	nd	nd	-	.040	8.3	1031.1	13.

Statistics	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	Solar Rad	Temp	Barom	Wind-Spd
Units	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm 2	d C	mmHg	km/h
Arith. Mean	1.02 -	.012	.012	.006	.005	-	.0376	8.0	693.5	-
Std. Dev.	2.79 -	.009	.011	.002	.008	-	.0067	8	7	-
Geo. Mean	.65 -	.009	.009	.005	.007	-	-	-	-	-
Geo.Std.Dev	1.70 -	1.728	2.142	1.277	1.868	-	-	-	-	-
Min Reading	.05 218.9	.005	.005	.005	.005	-	.0126	5.8	692.0	4.8
Max Reading	36.35 300.8	.045	.054	.016	.042	-	.0448	9.0	695.0	13.8
Min Average	.48 241.1	.006	.005	.005	.005	-	.0270	8.7	693.1	12.8
Max Average	2.54 277.9	.025	.027	.008	.020	-	.0442	8.7	693.5	13.1
# Valid Rdgs	223. 223.	223.	223.	223.	223.	0.	223.	223.	223.	223.
Min.Det.Lev	.10 -	.010	.010	.010	.010	.004	-	-	250.0	-
1/2hr Std	5.20 -	.300	.270	-	-	.100	-	-	-	-

- Invalid Data / Not Calculated
nd Average is less than Min. Detectable Level
m One or more readings Missing
* Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 70.0 %
Averaging Started at Nearest: .0 min

Start: 87/11/22 13:57 Scan: 60 sec
Average: 30.00 min Report: 5.00 min
Loc: CORNER OF HWY8 & HWY6 2 (510360-477135)

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
13:56-14:26	.0 288.	nd	nd	nd	nd	-	.032	9.1	1034.9	11.
14:01-14:31	.0 289.	nd	nd	nd	nd	-	.031	9.2	1035.9	12.
14:06-14:36	.5 287.	nd	nd	nd	nd	-	.031	9.3	1034.9	13.
14:11-14:41	.5 285.	nd	nd	nd	nd	-	.030	9.4	1033.9	14.
14:16-14:46	.5 284.	nd	nd	nd	nd	-	.028	9.4	1033.9	14.
14:21-14:51	.5 284.	nd	nd	nd	nd	-	.026	9.4	1033.9	14.
14:26-14:56	.5 286.	nd	nd	nd	nd	-	.025	9.3	1033.9	15.
14:31-15:01	.5 284.	nd	nd	nd	nd	-	.024	9.3	1033.9	15.
14:36-15:06	.5 281.	nd	nd	nd	nd	-	.022	9.3	1033.9	14.

Statistics	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
Units	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm 2	d C	mbar-esi	km/h
Arith. Mean	.54 -	.007	.009	.005	.007	-	.0275	9.2	1030.9	-
Std. Dev.	.24 -	.003	.007	.001	.004	-	.0055	.7	.1	-
Geo. Mean	.50 -	.006	.007	.005	.006	-	-	-	-	-
Geo.Std.Dev	1.36 -	1.473	1.826	1.180	1.494	-	-	-	-	-
Min Reading	.34 253.0	.005	.005	.005	.005	-	.0099	8.7	1030.7	7.6
Max Reading	1.91 325.9	.017	.029	.012	.022	-	.0342	9.7	1031.1	23.8
Min Average	.45 281.5	.006	.007	.005	.006	-	.0224	9.1	1030.9	11.4
Max Average	.61 289.3	.007	.010	.005	.007	-	.0320	9.4	1031.0	15.3
# Valid Rdgs	70. 70.	70.	70.	70.	70.	0.	70.	70.	70.	70.
Min.Det.Lev	.10 -	.010	.010	.010	.010	.004	-	-	950.0	-
1/2hr Std	5.20 -	.300	.270	-	-	.100	-	-	-	-

\- Invalid Data / Not Calculated
nd Average is less than Min. Detectable Level
a One or more readings Missing
* Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
Averaging Started at Nearest: .0 min

Start: 83/11 23 05:38 Scan: 00 sec
Average: 30.00 min Report: 5.00 min
Loc: CONC.#4: 0.00N 0 W(50665-47712S) (close to site #1002)

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	Solarfac	Temp	Barom	Wind-Spd
05:37-06:07	.6 104.	nd	.01	nd	nd	.01	.000	2.2	1031.8	20.
05:42-06:12	.5 107.	nd	.01	nd	nd	.01	.000	2.2	1031.8	19.
05:47-06:17	.6 110.	nd	.01	nd	nd	.01	.000	2.2	1031.9	18.
05:52-06:22	.6 109.	nd	.01	nd	nd	.01	.000	2.2	1031.9	19.
05:57-06:27	.6 110.	nd	.01	nd	nd	.01	.000	2.2	1031.9	19
06:02-06:32	.6 110.	nd	.01	nd	nd	.01	.000	2.2	1031.8	20.
06:07-06:37	.6 107.	nd	.01	nd	nd	.01	.000	2.2	1031.8	20.
06:12-06:42	.7 105.	nd	.01	nd	nd	.01	.000	2.2	1031.8	20.
06:17-06:47	.8 103.	nd	.01	nd	nd	.01	.000	2.2	1031.8	21.
06:22-06:52	.8 102.	nd	.01	nd	nd	.01	.000	2.2	1031.8	21.
06:27-06:57	.9 101.	nd	.01	nd	nd	.01	.000	2.3	1031.8	21.
06:32-07:02	.8 101.	nd	.01	nd	nd	.01	.000	2.3	1031.8	21.
06:37-07:07	.8 101.	nd	.01	nd	nd	.01	.000	2.4	1031.8	21.
06:42-07:12	.8 103.	nd	nd	nd	nd	.01	.000	2.4	1031.8	22.
06:47-07:17	.7 102.	nd	nd	nd	nd	.01	.000	2.4	1031.9	22.
06:52-07:22	.7 104.	nd	nd	nd	nd	.01	.000	2.4	1031.9	22.

Time	CO Wind-Dir	SO2	NOx	NO2	VG	Ozone	SolarRad	Temp	Baron	Wind-Spd
06:57-07:27	.6 107.	nd	nd	nd	nd	.01	.000	2.4	1031.0	22.
07:02-07:32	.6 106.	nd	nd	nd	nd	.01	.000	2.4	1031.0	21.
07:07-07:37	.6 106.	nd	nd	nd	nd	.01	.000	2.4	1031.0	22.
07:12-07:42	.6 106.	nd	nd	nd	nd	.01	.000	2.4	1030.9	22.
07:17-07:47	.6 107.	nd	nd	nd	nd	.01	.000	2.3	1030.9	21.
07:22-07:52	.6 106.	nd	nd	nd	nd	.01	.000	2.3	1031.0	20.
07:27-07:57	.6 105.	nd	nd	nd	nd	.01	.000	2.2	1031.0	19.
07:32-08:02	.6 104.	nd	nd	nd	nd	.01	.000	2.2	1031.0	19.
07:37-08:07	.6 102.	nd	nd	nd	nd	.02	.000	2.2	1031.0	18.
07:42-08:12	.6 102.	nd	nd	nd	nd	.01	.000	2.2	1031.1	17.
07:47-08:17	.6 101.	nd	nd	nd	nd	.02	.000	2.2	1031.0	17.
07:52-08:22	.6 102.	nd	nd	nd	nd	.02	.000	2.2	1031.0	18.
07:57-08:27	.8 103.	nd	nd	nd	nd	.02	.000	2.2	1031.0	18.
08:02-08:32	.8 103.	nd	nd	nd	nd	.02	.000	2.2	1030.9	18.
08:07-08:37	.8 104.	nd	nd	nd	nd	.02	.000	2.2	1030.9	17.
08:12-08:42	.8 102.	nd	nd	nd	nd	.02	.000	2.2	1030.8	17.
08:17-08:47	1.0 101.	nd	nd	nd	nd	.01	.000	2.3	1030.8	16.

Time	CO Wind-Dir	SO2	NOx	NO2	NC	Ozone	SolarRad	Temp	Baron	Wind-Spd
08:22-08:52	1.0 98.	nd	nd	nd	nd	.01	.000	2.2	1028.7	15.
08:27-08:57	.8 95.	nd	nd	nd	nd	.01	.000	2.4	1028.6	14.
08:32-09:02	.9 92.	nd	nd	nd	nd	.01	.000	2.4	1028.7	15.
08:37-09:07	.9 91.	nd	nd	nd	nd	.01	.000	2.5	1028.7	15.
08:42-09:12	1.0 91.	nd	nd	nd	nd	.01	.000	2.6	1028.7	15.
08:47-09:17	.9 93.	nd	nd	nd	nd	.01	.000	2.6	1028.7	16.
08:52-09:22	.9 95.	nd	nd	nd	nd	.01	.001	2.7	1028.8	16.
08:57-09:27	1.0 99.	nd	nd	nd	nd	.01	.001	2.8	1028.9	15
09:02-09:32	1.0 101.	nd	nd	nd	nd	.01	.001	2.9	1029.0	15.
09:07-09:37	1.0 101.	nd	nd	nd	nd	.01	.001	2.9	1029.0	16
09:12-09:42	.9 100.	nd	nd	nd	nd	.01	.002	3.0	1029.0	15.
09:17-09:47	.9 99.	nd	nd	nd	nd	.01	.002	3.1	1029.0	15.
09:22-09:52	.9 99.	nd	nd	nd	nd	.01	.002	3.1	1029.1	16.
09:27-09:57	.8 98.	nd	nd	nd	nd	.01	.002	3.2	1029.0	16.
09:32-10:02	.8 98.	nd	nd	nd	nd	.01	.002	3.3	1029.0	17.
09:37-10:07	.8 98.	nd	nd	nd	nd	.01	.003	3.4	1029.0	17.
09:42-10:12	.8 98.	nd	nd	nd	nd	.01	.004	3.4	1029.0	17.

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Baron	Wind-Spd.
09:47-10:17	.7 99.	nd	nd	nd	nd	.01	.004	3.5	1027.1	17.
09:52-10:22	.7 98.	nd	nd	nd	nd	.01	.005	3.6	1027.0	17.
09:57-10:27	.7 98.	nd	nd	nd	nd	.01	.006	3.7	1027.0	16.
10:02-10:32	1.1 99.	nd	.01	nd	nd	.01	.007	3.8	1026.9	16.
10:07-10:37	1.0 98.	nd	.01	nd	nd	.01	.008	3.9	1026.7	18.
10:12-10:42	1.1 97.	nd	.01	nd	nd	.01	.005	3.9	1026.5	20.
10:17-10:47	1.1 96.	nd	.01	nd	nd	.01	.007	4.0	1026.3	21.
10:22-10:52	1.1 97.	nd	.02	nd	.01	.01	.007	4.1	1026.1	22.
10:27-10:57	1.1 97.	nd	.02	nd	.01	.01	.007	4.1	1027.9	24.
10:32-11:02	.8 96.	nd	.02	nd	.01	.01	.007	4.2	1027.8	24.
10:37-11:07	.8 98.	nd	.02	nd	.01	.01	.006	4.2	1027.8	24.
10:42-11:12	.8 99.	nd	.02	nd	.01	.01	.007	4.3	1027.8	22.
10:47-11:17	.8 99.	nd	.02	nd	.01	.01	.007	4.4	1027.8	21.
10:52-11:22	.8 99.	nd	.02	nd	.01	.01	.007	4.5	1027.7	19.
10:57-11:27	.8 100.	nd	.02	nd	.01	.01	.007	4.6	1027.6	18.
11:02-11:32	.8 100.	nd	.02	nd	nd	.01	.007	4.7	1027.5	18.
11:07-11:37	.8 100.	nd	.02	nd	.01	.01	.007	4.8	1027.4	17.

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Baros	Wind-Spd
11:12-11:42	.8 101.	nd	.02	nd	.01	.01	.007	4.7	1027.2	16.
11:17-11:47	.8 102.	nd	.02	nd	.01	.01	.007	5.0	1027.1	18.
11:22-11:52	.8 101.	nd	.02	nd	.01	.01	.008	5.0	1027.0	20.
11:27-11:57	.9 101.	nd	.03	nd	.02	.01	.009	5.1	1027.0	21.
11:32-12:02	.9 100.	nd	.03	nd	.02	.01	.009	5.1	1026.8	22.
11:37-12:07	1.0 100.	nd	.03	nd	.02	.01	.010	5.2	1026.6	23.
11:42-12:12	1.0 100.	nd	.03	nd	.02	.01	.010	5.3	1026.5	24.
11:47-12:17	1.0 99.	nd	.03	.01	.02	.01	.010	5.3	1026.3	24.
11:52-12:22	1.3 99.	nd	.03	.01	.02	.01	.010	5.4	1026.2	23.
11:57-12:27	1.2 98.	nd	.03	.01	.02	.01	.010	5.5	1026.0	23.
12:02-12:32	1.2 98.	nd	.03	nd	.01	.01	.009	5.5	1025.9	22.
12:07-12:37	1.0 99.	nd	.02	nd	.01	.01	.009	5.6	1025.8	21.
12:12-12:42	.9 98.	nd	.02	nd	nd	.01	.007	5.6	1025.6	22.
12:17-12:47	.9 97.	nd	.02	nd	nd	.01	.008	5.6	1025.5	24.
12:22-12:52	.6 96.	nd	.02	nd	nd	.02	.008	5.7	1025.3	26.
12:27-12:57	.6 98.	nd	.01	nd	nd	.02	.008	5.7	1025.2	26.
12:32-13:02	.6 98.	nd	.01	nd	nd	.02	.008	5.7	1025.1	27.

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Baron	Wind-Spd
12:37-13:07	.6 98.	nd	.01	nd	nd	.02	.008	5.7	1025.0	23.
12:42-13:12	.6 99.	nd	nd	nd	nd	.02	.008	5.8	1025.0	26.
12:47-13:17	.6 100.	nd	nd	nd	nd	.02	.008	5.7	1024.9	25.
12:52-13:22	.6 100.	nd	nd	nd	nd	.02	.007	5.7	1024.8	24.
12:57-13:27	.6 101.	nd	nd	nd	nd	.02	.007	5.7	1024.7	24.
13:02-13:32	.6 101.	nd	nd	nd	nd	.02	.006	5.7	1024.6	25.
13:07-13:37	.6 101.	nd	nd	nd	nd	.02	.005	5.7	1024.5	25.
13:12-13:42	.6 100.	nd	nd	nd	nd	.02	.004	5.7	1024.4	24.
13:17-13:47	.7 100.	nd	nd	nd	nd	.02	.004	5.7	1024.3	23.
13:22-13:52	.7 101.	nd	nd	nd	nd	.02	.003	5.8	1024.2	22.
13:27-13:57	.8 99.	nd	nd	nd	nd	.02	.003	5.8	1024.2	21.
13:32-14:02	.8 96.	nd	nd	nd	nd	.02	.002	5.7	1024.1	22.
13:37-14:07	.8 97.	nd	nd	nd	nd	.02	.002	5.7	1024.1	22.
13:42-14:12	.8 100.	nd	nd	nd	nd	.02	.002	5.7	1024.0	22.
13:47-14:17	.7 99.	nd	nd	nd	nd	.02	.002	5.6	1024.0	23.
13:52-14:22	.7 98.	nd	nd	nd	nd	.01	.002	5.6	1024.0	22.
13:57-14:27	.7 98.	nd	.01	nd	nd	.01	.002	5.6	1024.0	23.

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
14:02-14:32	.7 99.	nd	.01	nd	nd	.01	.002	5.6	1024.0	13.
14:07-14:37	.7 99.	nd	.02	nd	nd	.01	.003	5.6	1024.0	13.
14:12-14:42	.7 97.	nd	.02	nd	.01	.01	.002	5.6	1023.9	13.
14:17-14:47	.7 96.	nd	.02	nd	.01	.01	.003	5.7	1023.7	13.
14:22-14:52	.8 96.	nd	.02	nd	.01	.01	.003	5.7	1023.6	13.
14:27-14:57	.8 94.	nd	.02	nd	.01	.01	.003	5.7	1023.4	13.
14:32-15:02	.8 92.	nd	.02	nd	nd	.01	.003	5.7	1023.3	13.
14:37-15:07	.8 90.	nd	.01	nd	nd	.01	.002	5.8	1023.1	13.
14:42-15:12	.8 89.	nd	.01	nd	nd	.01	.002	5.7	1023.1	13.
14:47-15:17	.9 90.	nd	.01	nd	nd	.01	.001	5.7	1023.0	13.
14:52-15:22	.8 92.	nd	.02	nd	nd	.01	.001	5.7	1023.0	13.
14:57-15:27	.8 92.	nd	.02	nd	nd	.01	.001	5.6	1023.0	13.

Statistics	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
Units	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm^2	deg C	mbar-psi	km/h
Arith. Mean	.78 -	.005	.012	.006	.008	.013	.0033	4.3	1027.9	-
Std. Dev.	.74 -	.001	.008	.002	.006	.004	.0035	1.5	3.0	-
Geo. Mean	.79 -	.005	.010	.006	.006	.012	-	-	-	-
Geo.Std.Dev	1.49 -	1.121	1.701	1.320	1.634	1.393	-	-	-	-
Min Reading	.05 70.3	.005	.005	.005	.005	.002	.0000	2.1	1022.9	.5
Max Reading	12.22 125.6	.016	.057	.015	.042	.024	.0111	8.0	1032.2	36.3
Min Average	.54 88.9	.005	.005	.005	.005	.006	.0000	2.2	1023.0	14.1
Max Average	1.27 110.4	.007	.031	.011	.020	.017	.0101	5.7	1031.7	26.7
# Valid Rdgs	592. 592.	592. *	592.	592.	592.	592.	592.	592.	592.	592.
Min.Det.Lev	.10 -	.010	.010	.010	.010	.004	-	-	950.3	-
1/2hr Std	5.20 -	.300	.270	-	-	.100	-	-	-	-

- Invalid Data / Not Calculated
nd Average is less than Min. Detectable Level
m One or more readings Missing
* Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
Averaging Started at Nearest: .0 min

Start: 83/11/24 09:51 Scan: 60 sec
Average: 30.00 min Report: 5.00 min
Loc: 0.7 KM NW of Y ON SLANT RD (510990-477295)

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Berom	Wind-Spd
09:50-10:20	nd 238.	nd	nd	nd	nd	-	.003	2.4	1022.9	33.
09:55-10:25	nd 240.	nd	nd	nd	nd	-	.003	2.3	1022.9	30.
10:00-10:30	nd 241.	nd	nd	nd	nd	-	.004	2.3	1023.0	31.
10:05-10:35	nd 242.	nd	nd	nd	nd	-	.005	2.3	1023.0	33.
10:10-10:40	nd 243.	nd	nd	nd	nd	-	.006	2.3	1023.1	32.
10:15-10:45	nd 244.	nd	nd	nd	nd	-	.006	2.3	1023.1	31.
10:20-10:50	nd 245.	nd	nd	nd	nd	-	.006	2.3	1023.1	30.
10:25-10:55	nd 245.	nd	nd	nd	nd	-	.006	2.3	1023.1	29.
10:30-11:00	nd 245.	nd	nd	nd	nd	-	.006	2.3	1023.2	30.
10:35-11:05	nd 243.	nd	nd	nd	nd	-	.005	2.3	1023.2	30.
10:40-11:10	nd 243.	nd	nd	nd	nd	-	.004	2.3	1023.3	30.
10:45-11:15	nd 242.	nd	nd	nd	nd	-	.004	2.3	1023.4	28.
10:50-11:20	nd 242.	nd	nd	nd	nd	-	.003	2.2	1023.4	27.
10:55-11:25	nd 242.	nd	nd	nd	nd	-	.004	2.2	1023.4	28.
11:00-11:30	nd 243.	nd	nd	nd	nd	-	.004	2.1	1023.4	28.
11:05-11:35	nd 245.	nd	nd	nd	nd	-	.005	2.1	1023.3	28.

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
11:10-11:40	nd 244.	nd	nd	nd	nd	-	.000	2.1	1023.3	28.
11:15-11:45	nd 242.	nd	nd	nd	nd	-	.000	2.1	1023.2	31.
11:20-11:50	nd 240.	nd	nd	nd	nd	-	.007	2.1	1023.2	32.
11:25-11:55	nd 239.	nd	nd	nd	nd	-	.007	2.2	1023.2	33.
11:30-12:00	nd 236.	nd	nd	nd	nd	-	.007	2.2	1023.1	34.
11:35-12:05	nd 235.	nd	nd	nd	nd	-	.000	2.3	1023.1	34.
11:40-12:10	nd 235.	nd	nd	nd	nd	-	.005	2.2	1023.0	34.

Statistics	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
Units	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm^2	d C	mbar-msl	km/h
Arith. Mean	.05 -	.005	.006	.005	.006	-	.0047	2.2	1023.1	-
Std. Dev.	.01 -	.000	.004	.001	.003	-	.0021	.2	.2	-
Geo. Mean	.05 -	.005	.006	.005	.005	-	-	-	-	-
Geo.Std.Dev	1.07 -	1.000	1.452	1.116	1.288	-	-	-	-	-
Min Reading	.05 226.8	.005	.005	.005	.005	-	.0008	1.9	1022.4	12.7
Max Reading	.11 259.9	.005	.022	.012	.027	-	.0122	2.6	1023.6	53.6
Min Average	.05 235.3	.005	.005	.005	.005	-	.0028	2.1	1022.9	27.4
Max Average	.05 245.3	.005	.009	.006	.007	-	.0066	2.4	1023.4	34.1
# Valid Rdgs	144. 144.	144.	144.	144.	144.	0.	144.	144.	144.	144.
Min.Det.Lev	.10 -	.010	.010	.010	.010	.004	-	-	250.0	-
1/2hr Std	5.20 -	.300	.270	-	-	.100	-	-	-	-

- Invalid Data / Not Calculated
nd Average is less than Min. Detectable Level
m One or more readings Missing
* Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
Averaging Started at Nearest: .0 min

Start: 83/11/24 12:24 Scan: 60 sec
Average: 30.00 min Report: 5.00 min
Loc: SLANT RD AT RRW: X (51135-47725)

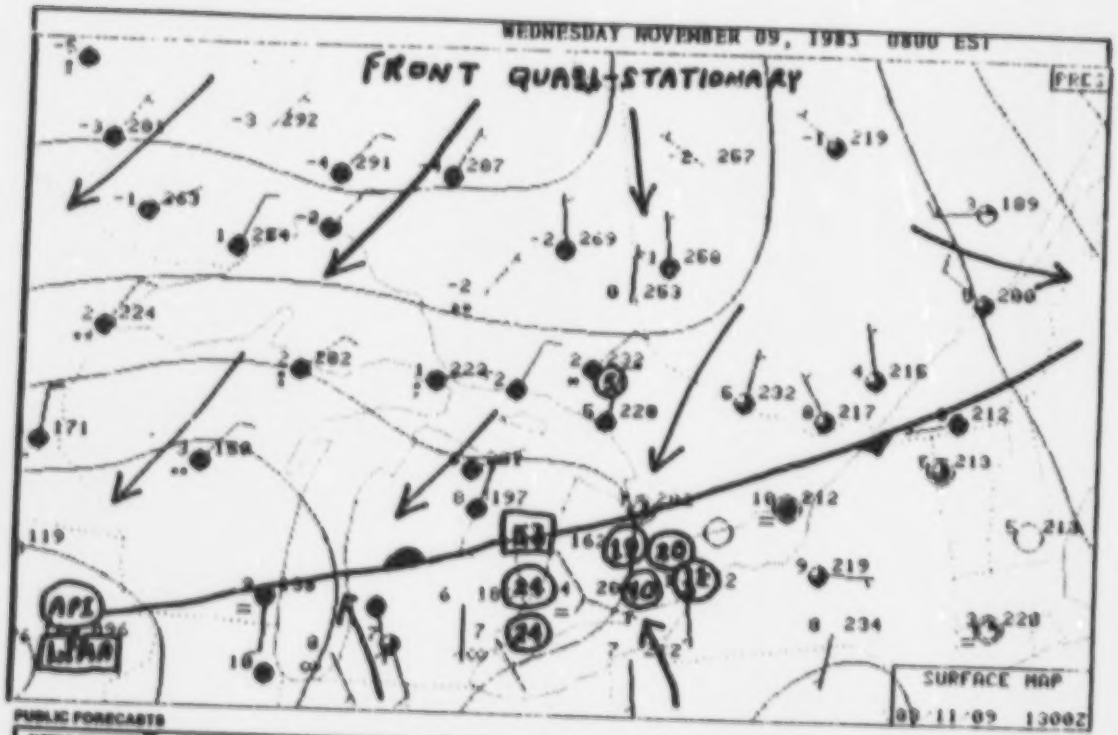
Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Barom	Wind-Spd
12:27-12:53	1.1 249.	nd	.01	nd	no	-	.004	1.5	1023.4	47.
12:28-12:58	.8 249.	nd	.01	nd	nd	-	.004	1.5	1023.4	43.
12:33-13:03	.8 247.	nd	nd	nd	nd	-	.004	1.4	1023.1	44.
12:38-13:08	.6 246.	nd	nd	nd	nd	-	.004	1.4	1023.2	45.
12:43-13:13	.6 246.	nd	nd	nd	nd	-	.004	1.3	1023.2	45
12:48-13:18	.2 244.	nd	.02	nd	.01	-	.004	1.2	1023.3	44.
12:53-13:23	nd 244.	nd	.02	nd	.01	-	.004	1.2	1023.3	42.
12:58-13:28	nd 244.	nd	.02	nd	.01	-	.004	1.2	1023.4	41.
13:03-13:33	nd 244.	nd	.02	nd	.01	-	.004	1.2	1023.5	39.
13:08-13:38	nd 243.	nd	.02	nd	.01	-	.004	1.2	1023.5	37.
13:13-13:43	nd 242.	nd	.02	nd	.01	-	.003	1.2	1023.6	35.
13:18-13:48	nd 244.	nd	.01	nd	nd	-	.003	1.2	1023.7	34.
13:23-13:53	nd 246.	nd	.01	nd	nd	-	.002	1.1	1023.7	35.
13:28-13:58	.1 249.	nd	.01	nd	nd	-	.002	1.1	1023.8	36.
13:33-14:03	.2 252.	nd	.01	nd	nd	-	.002	1.1	1023.8	35.
13:38-14:08	.4 252.	nd	.01	nd	nd	-	.002	1.1	1023.8	34.

Time	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Baro	Wind-Spd
13:43-14:13	.4 252.	nd	nd	nd	nd	-	.002	1.0	1023.9	33.
13:48-14:18	.4 251.	nd	nd	nd	nd	-	.002	1.0	1023.9	33.
13:53-14:23	.4 249.	nd	nd	nd	nd	-	.002	1.1	1023.9	31.
13:58-14:28	.3 248.	nd	nd	nd	nd	-	.002	1.1	1023.9	31.
14:03-14:33	.3 247.	nd	nd	nd	nd	-	.003	1.1	1023.9	33.
14:08-14:38	nd 247.	nd	nd	nd	nd	-	.003	1.1	1023.8	34.
14:13-14:43	nd 247.	nd	nd	nd	nd	-	.003	1.1	1023.8	35.
14:18-14:48	nd 245.	nd	nd	nd	nd	-	.003	1.2	1023.8	36.
14:23-14:53	nd 243.	nd	nd	nd	nd	-	.003	1.2	1023.8	36.
14:28-14:58	nd 241.	nd	nd	nd	nd	-	.003	1.2	1023.8	37.
14:33-15:03	nd 239.	nd	nd	nd	nd	-	.003	1.2	1023.9	35.
14:38-15:08	nd 238.	nd	nd	nd	nd	-	.002	1.2	1023.9	34.
14:43-15:13	nd 239.	nd	nd	nd	nd	-	.001	1.2	1023.9	34.
14:48-15:18	.1 242.	nd	nd	nd	nd	-	.001	1.1	1023.9	33.
14:53-15:23	.2 246.	nd	nd	nd	nd	-	.001	1.1	1023.9	33.

Statistics	CO Wind-Dir	SO2	NOx	NO2	NO	Ozone	SolarRad	Temp	Baron	Wind-Spd
Units	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm 2	g C	mbar-msl	km/h
Arith. Mean	.31 -	.005	.016	.006	.008	-	.0027	1.1	1022.0	-
Std. Dev.	1.11 -	.000	.016	.004	.013	-	.0013	.2	.4	-
Geo. Mean	.07 -	.005	.007	.006	.006	-	-	-	-	-
Geo.Std.Dev	3.42 -	1.000	1.958	1.442	1.008	-	-	-	-	-
Min Reading	.05 227.0	.005	.005	.005	.005	-	.0000	1.0	1022.0	20.4
Max Reading	9.36 262.4	.005	.136	.030	.113	-	.0059	1.9	1024.1	53.9
Min Average	.05 238.2	.005	.005	.005	.005	-	.0007	1.0	1022.0	31.3
Max Average	1.12 252.2	.005	.018	.007	.014	-	.0044	1.0	1022.9	45.4
# Valid Rdgs	180. 180.	180.	180.	180.	180.	0.	180.	180.	180.	180.
Min.Det.Lev	.10 -	.010	.010	.010	.010	.004	-	-	950.0	-
1/2hr Std	5.20 -	.300	.270	-	-	.100	-	-	-	-

- Invalid Data / Not Calculated
nd Average is less than Min. Detectable Level
e One or more readings Missing
* Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
Averaging Started at Nearest: .0 min



WIND AND STABILITY FORECASTS

SOUTHERN ONTARIO
(south of 46° N. lat.)

MAINLY DRY AND STABLE. WINDS SE 10 TO 20 KM/H.

NORTHEASTERN ONTARIO
(east of 84° W. long.)

MOIST AND STABLE. WINDS NE 15 TO 30 KM/H.

NORTHWESTERN ONTARIO
(west of 84° W. long.)

MOIST AND STABLE. WINDS NE 20 TO 30 KM/H.

PUBLIC FORECASTS

METRO TORONTO
HAMILTON
LONDON
WINDSOR

- PARTLY CLOUDY TODAY. HIGHS 12 TO 14. TONIGHT MAINLY CLOUDY. LOWS 5 TO 7. RAIN DEVELOPING THURSDAY. HIGH NEAR 12. PROBABILITY OF PRECIPITATION NEAR ZERO TODAY. 20 PERCENT TONIGHT. 80 PERCENT THURSDAY.

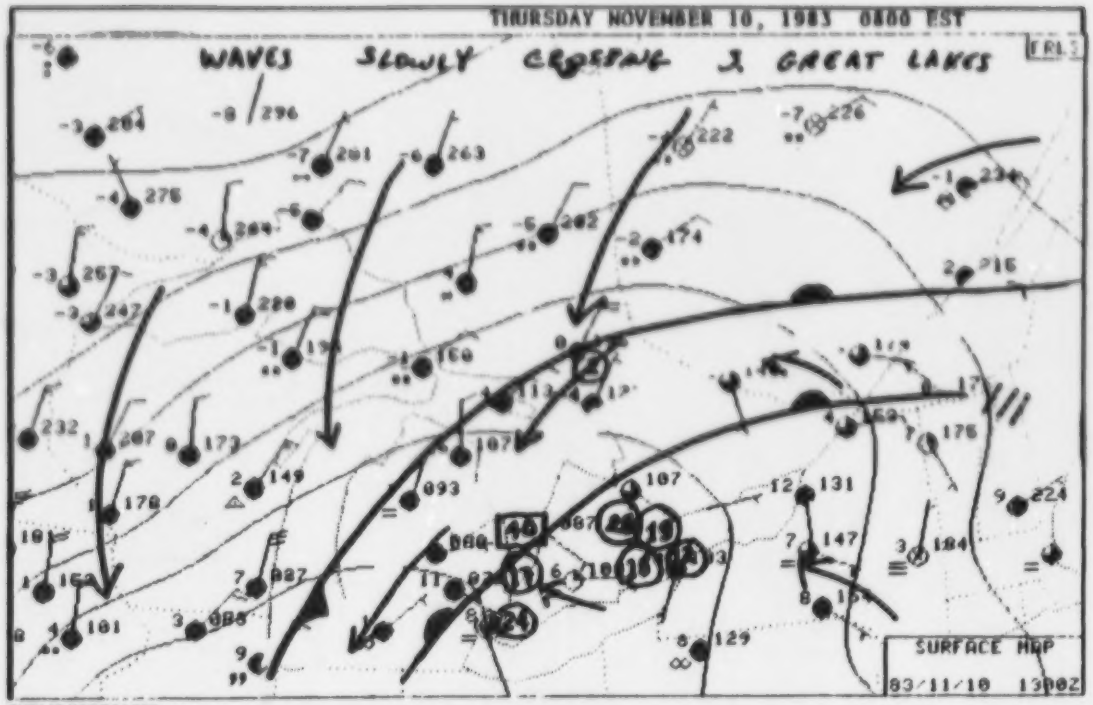
SUDBURY

- CLOUDY TODAY WITH ISOLATED SHOWERS. HIGH 6. RAIN OR WET SNOW DEVELOPING OVERNIGHT. LOW MINUS 3. THURSDAY RAIN OR WET SNOW CHANGING TO SNOW. HIGH 3.

THUNDER BAY

- CLOUDY TODAY WITH LIGHT SNOW TAPERING TO OCCASIONAL LIGHT SNOWFLURRIES THIS EVENING. HIGH TODAY 1. LOW TONIGHT MINUS 4. CLOUDY WITH SUNNY PERIODS THURSDAY. ISOLATED SNOWFLURRIES. HIGH MINUS 1.

Produced by AIR QUALITY AND METEOROLOGY SECTION AIR RESOURCES BRANCH



WIND AND STABILITY FORECASTS

SOUTHERN ONTARIO
(south of 45° N. lat.)

MOIST AND STABLE. WINDS E 10 TO 20 KM/H BECOMING NE 25 TO 35 TONIGHT.

NORTHEASTERN ONTARIO
(east of 85° W. long.)

MOIST AND STABLE. WINDS NE 20 TO 35 KM/H.

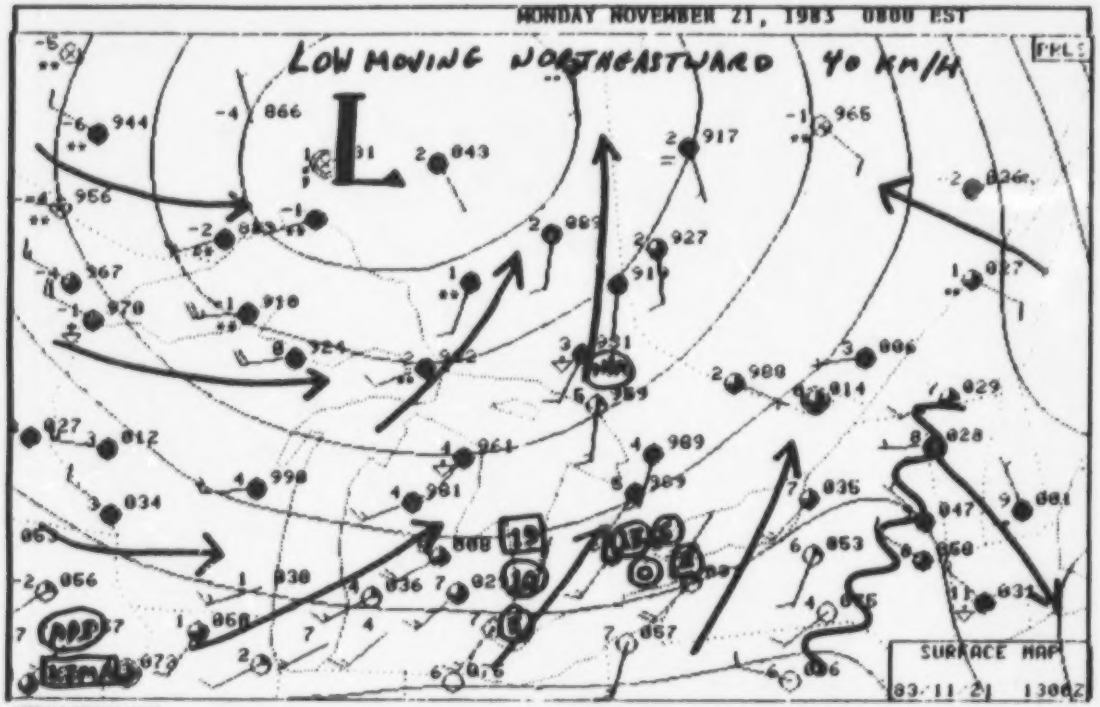
NORTHWESTERN ONTARIO
(west of 85° W. long.)

DRY AND STABLE. WINDS GENERALLY N 20 TO 30 KM/H.

PUBLIC FORECASTS

METRO TORONTO, HAMILTON	- CLOUDING OVER TODAY. RAIN DEVELOPING AROUND MIDDAY. CONTINUING TONIGHT. HIGHS TODAY 12 TO 15. LOWS TONIGHT 6 TO 10. FRIDAY WINDY AND COLDER WITH RAIN CHANGING TO WET SNOW IN THE AFTERNOON. TEMPERATURES FALLING DURING THE DAY.
LONDON	- INCREASING CLOUDINESS, RAIN DEVELOPING THIS P.M. HIGHS 9 TO 13. RAIN AND COLDER TONIGHT. LOWS 4 TO 6. FRIDAY COLD WITH RAIN CHANGING TO SNOW IN THE MORNING. TEMPERATURES FALLING TO FREEZING BY P.M.
WINDSOR	- CLOUDING OVER WITH RAIN DEVELOPING. HIGH 15. RAIN TONIGHT WITH LOWS 4. FRIDAY RAIN CHANGING TO SNOW. CLEARING LATE IN THE DAY. TEMPERATURE FALLING DURING THE DAY.
SUDBURY	- CLOUDY TODAY WITH RAIN DEVELOPING. HIGH 5. RAIN CHANGING TO SNOW TONIGHT. LOW MINUS 2. FRIDAY SNOW ENDING THEN PARTIAL CLEARING. TEMPERATURES STEADY AROUND MINUS 2.
THUNDER BAY	- SUNNY WITH CLOUDY PERIODS TODAY. HIGH 2. A FEW CLOUDS TONIGHT WITH LOW MINUS 8. SUNNY FRIDAY. HIGH 2.

Produced by AIR QUALITY AND METEOROLOGY SECTION, AIR RESOURCES BRANCH



WIND AND STABILITY FORECASTS

SOUTHERN ONTARIO
(south of 46° N. lat.)

MOIST AND STABLE. WINDS SW 25 TO 45 KM/H TODAY AND SW 10 TO 20 TONIGHT.

NORTHEASTERN ONTARIO
(east of 80° W. long.)

MOIST AND STABLE. WIND S TO SW 25 TO 45 KM/H TODAY AND SW 10 TO 20 TONIGHT.

NORTHWESTERN ONTARIO
(west of 80° W. long.)

MOIST AND STABLE. WINDS W 25 TO 35 KM/H BECOMING SW 10 TO 20 THIS AFTERNOON.

PUBLIC FORECASTS

METRO TORONTO
HAMILTON
LONDON
WINDSOR

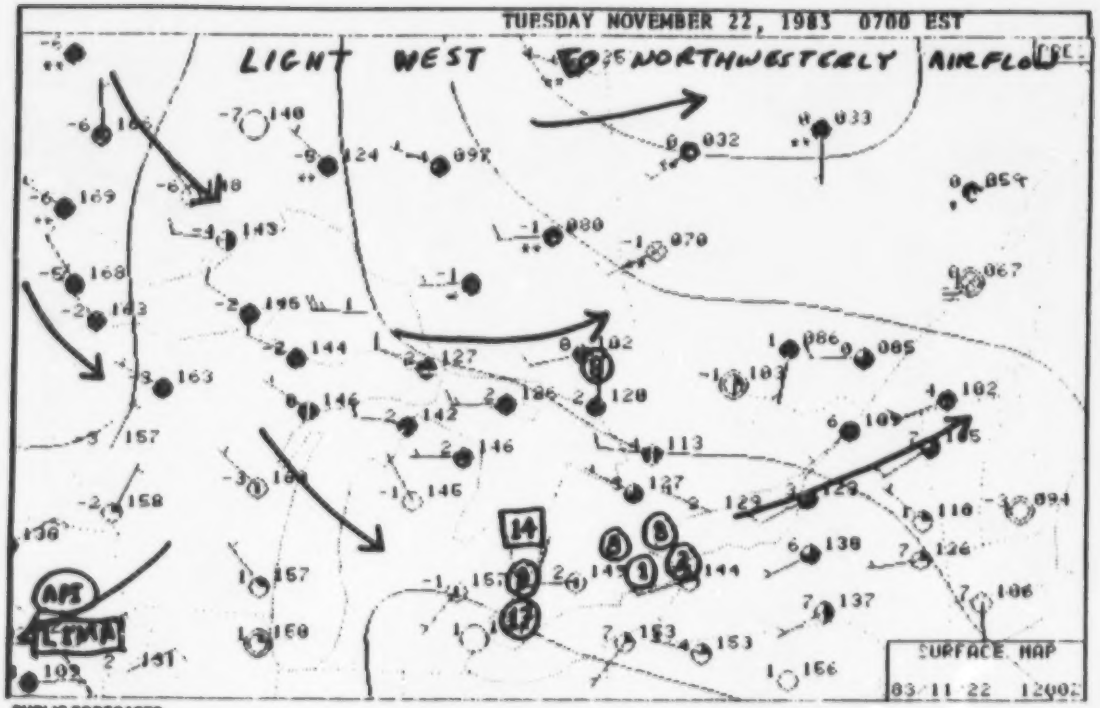
- SUNNY OR BECOMING SUNNY WITH CLOUDY INTERVALS TODAY AND TUESDAY. HIGHS 8 TO 10. CLEAR TONIGHT WITH LOWS NEAR FREEZING TO PLUS 3. VARY MILD TUESDAY WITH HIGHS 14 TO 17. PROBABILITY OF PRECIPITATION 10 PERCENT TODAY. NEAR ZERO TONIGHT. 10 PERCENT TUESDAY.

SUDBURY

- ISOLATED SHOWERS THIS MORNING. PARTIAL CLEARING THIS AFTERNOON. HIGH 6. BECOMING MAINLY CLEAR TONIGHT. LOW MINUS 3. TUESDAY SUNNY WITH CLOUDY PERIODS. HIGH 8.

THUNDER BAY

- OCCASIONAL LIGHT SNOW TODAY WITH 3 TO 6 CENTIMETRES ACCUMULATIONS. HIGH NEAR ZERO. OCCASIONAL LIGHT SNOW TONIGHT AND TUESDAY. LOW TONIGHT MINUS 5. HIGH TUESDAY MINUS 2.



WIND AND STABILITY FORECASTS

SOUTHERN ONTARIO
(south of 45° N. lat.)

MOSTLY DRY & STABLE.
WINDS W 15-25 KM/HR
BECOMING VARIABLE
TONIGHT.

NORTHEASTERN ONTARIO
(east of 85° W. long.)

MOSTLY DRY & STABLE.
WINDS W 15-25 KM/HR.

NORTHWESTERN ONTARIO
(west of 85° W. long.)

MOIST & STABLE.
WINDS NW 10-20 KM/HR.

PUBLIC FORECASTS

METRO TORONTO, HAMILTON - SUNNY WITH CLOUDY INTERVALS TODAY. INCREASING CLOUDINESS OVERNIGHT. HIGHS BOTH DAYS 8 TO 10. LOWS TONIGHT NEAR 2. PROBABILITY OF PRECIPITATION ZERO TODAY. NEAR ZERO TONIGHT. 90 PERCENT WEDNESDAY.

LONDON - SUNNY WITH CLOUDY INTERVALS. INCREASING CLOUDINESS OVERNIGHT. HIGH BOTH DAYS 10. LOW TONIGHT 2. WEDNESDAY CLOUDY WITH RAIN DEVELOPING IN THE MORNING

WINDSOR - SUNNY WITH CLOUDY PERIODS. HIGH 11. INCREASING CLOUD TONIGHT WITH LOW 3. WEDNESDAY CLOUDY WITH RAIN DEVELOPING. HIGH 15

SUDBURY - VARIABLE CLOUDINESS. HIGH 5. CLEARING TONIGHT WITH LOW MINUS 4. WEDNESDAY SUNNY WITH INCREASING AFTERNOON CLOUDINESS . HIGH 3

THUNDER BAY - CLOUDY WITH OCCASIONAL SNOWFLURRIES TODAY AND TONIGHT. HIGH ZERO. LOW TONIGHT MINUS 8. CLOUDY WITH PERIODS OF WET SNOW WEDNESDAY. HIGH ZERO.

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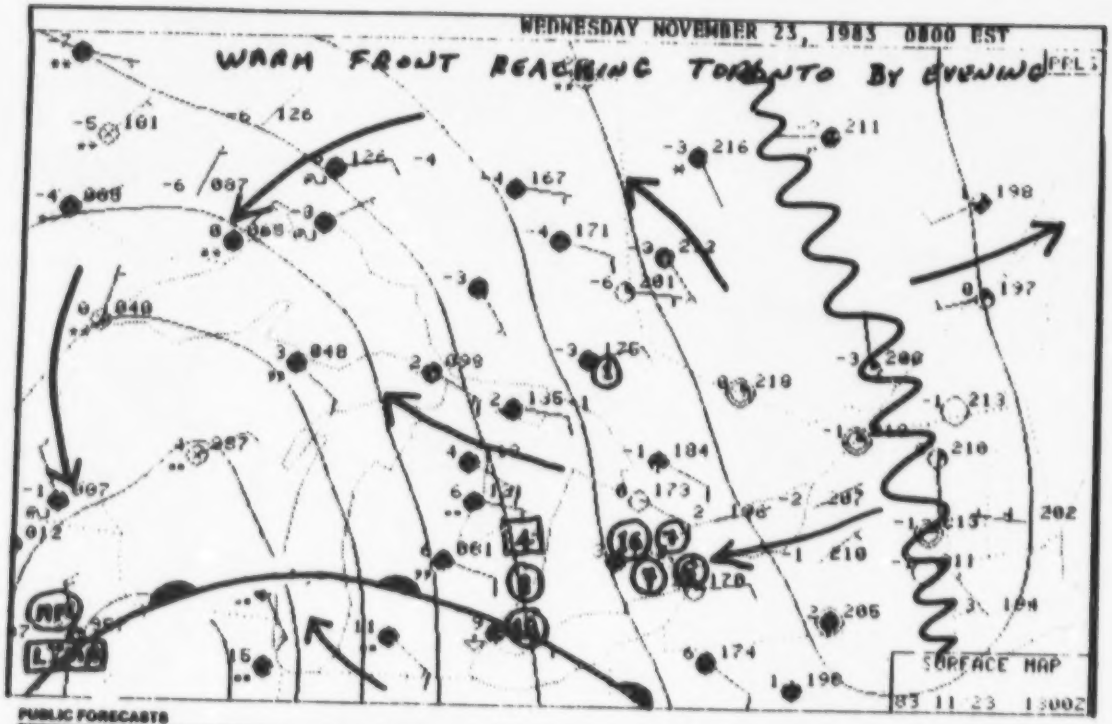

WIND AND STABILITY FORECASTS

SOUTHERN ONTARIO
(south of 46° N. lat.)

MOIST AND STABLE. WINDS E 20 TO 35 KM/HR VEERING TO S 30 TO 45 BY EVENING.

NORTHEASTERN ONTARIO
(east of 80° W. long.)

MOIST AND STABLE. WINDS E 20 TO 35 KM/H VEERING TO S 30 TO 45 BY EVENING.

NORTHWESTERN ONTARIO
(west of 80° W. long.)

MOIST & STABLE. WINDS E TO NE 30 TO 40 KM/H.

PUBLIC FORECASTS

METRO TORONTO, HAMILTON, LONDON, WINDSOR - BECOMING CLOUDY THIS MORNING. RAIN THIS AFTERNOON CONTINUING OVERNIGHT. PARTIAL CLEARING LATE TOMORROW. HIGH TODAY 10. TEMPERATURE RISING TO 14 TONIGHT THEN FALLING TO NEAR FREEZING BY LATE THURSDAY AFTERNOON. PROBABILITY OF PRECIPITATION 100 PERCENT TODAY. 100 PERCENT TONIGHT. 40 PERCENT THURSDAY.

SUDBURY - RAIN DEVELOPING THIS MORNING, TAPERING TO SHOWERS OVERNIGHT. THURSDAY PARTIAL CLEARING. HIGH TODAY 14. LOW TONIGHT 10. TEMPERATURES FALLING TO FREEZING BY LATE THURSDAY AFTERNOON.

THUNDER BAY - RAIN TODAY TAPERING TO SHOWERS TONIGHT. PARTIAL CLEARING THURSDAY. TODAY HIGH 17. LOW TONIGHT 9. TEMPERATURES DROPPING TO NEAR FREEZING THURSDAY AFTERNOON.

- RAIN DEVELOPING THIS AFTERNOON, CONTINUING TONIGHT. THURSDAY A FEW SHOWERS. HIGH TODAY 4. TEMPERATURES RISING TO 6 TONIGHT THEN DROPPING TO NEAR FREEZING THURSDAY AFTERNOON.

- SNOW WITH RISK OF FREEZING RAIN CHANGING TO A MIXTURE OF WET SNOW AND RAIN TODAY AND OVERNIGHT. HIGH 3. LOW TONIGHT -2. PERIODS OF SNOW AND DRIFTING SNOW THURSDAY. TEMPERATURES STEADY NEAR - 2

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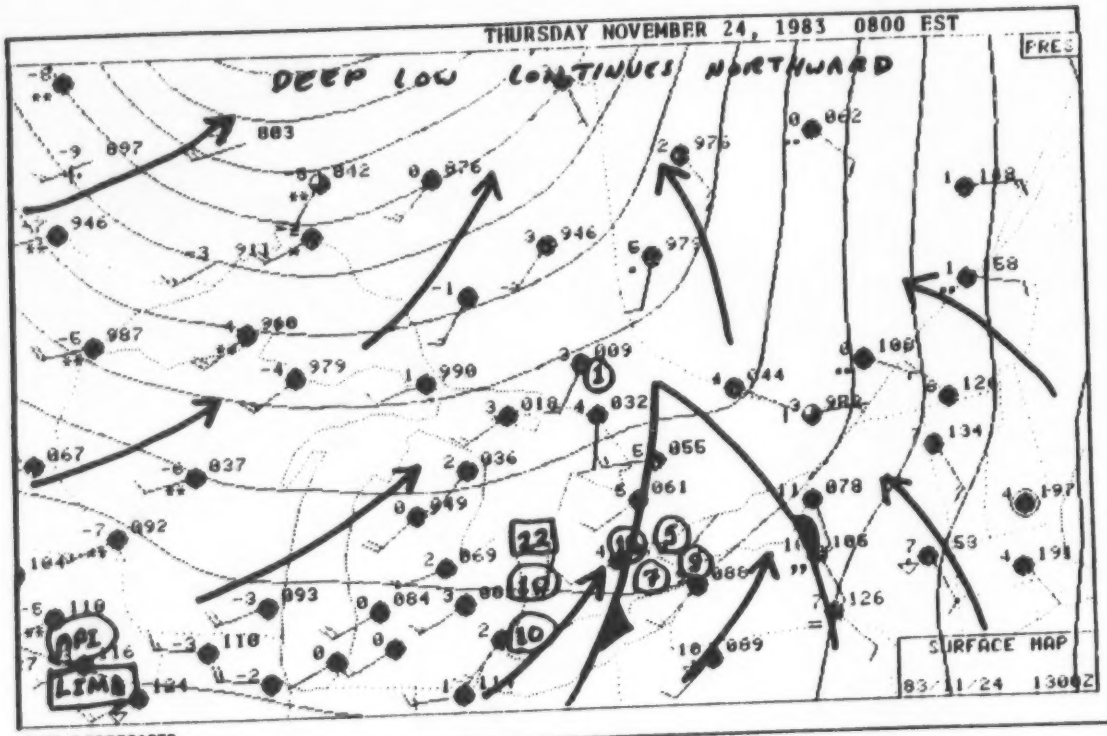


WIND AND STABILITY FORECASTS

SOUTHERN ONTARIO
(south of 45° N. lat.)

MOIST AND STABLE. WINDS SW 20 TO 40 KM/H.

NORTHEASTERN ONTARIO
(east of 85° W. long.)

MOIST AND STABLE. WINDS S TO SW 25 TO 45 KM/H.

NORTHWESTERN ONTARIO
(west of 85° W. long.)

MOIST & STABLE. WINDS W TO SW 25 TO 45 KM/H.

PUBLIC FORECASTS

METRO TORONTO
HAMILTON
LONDON
WINDSOR

- TURNING COLDER TODAY. CHANCE OF A FLURRY THIS AFTERNOON. CLEARING TONIGHT. FRIDAY MAINLY SUNNY. TEMPERATURES FALLLING TO NEAR FREEZING THIS AFTERNOON. LOWS TONIGHT MINUS 3 TO MINUS 6. HIGH FRIDAY AROUND FREEZING. PROBABILITY OF PRECIPITATION 10 PERCENT TONIGHT. NEAR ZERO FRIDAY.

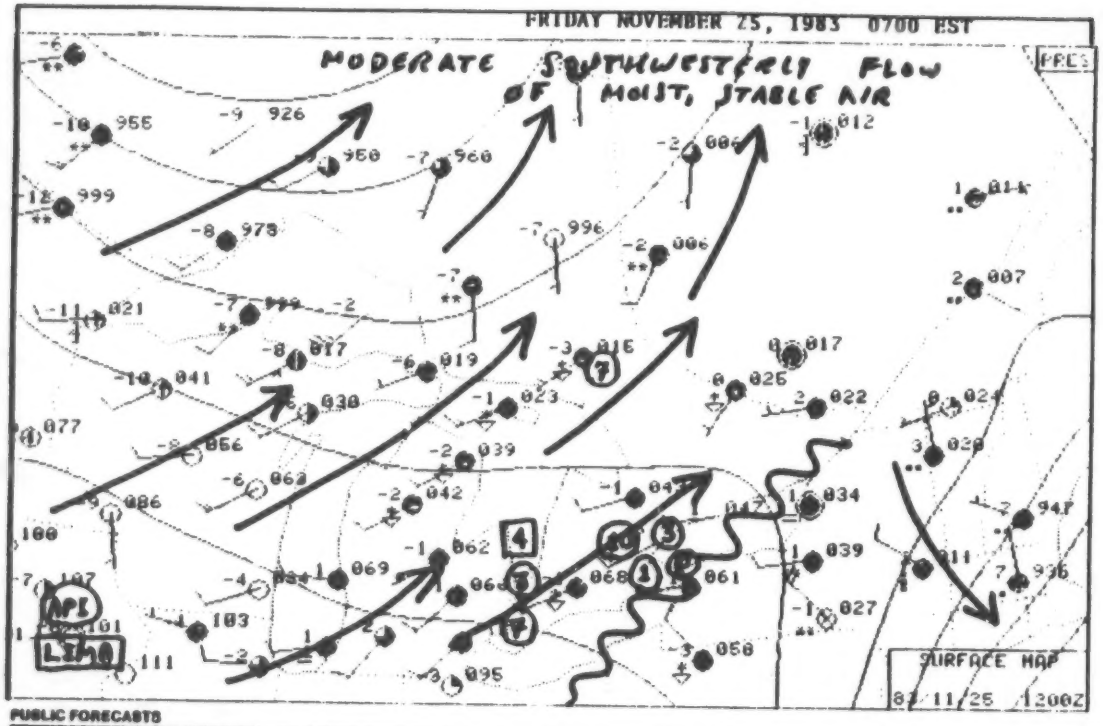
SUDBURY

- FLURRIES HEAVY AT TIMES DEVELOPING THIS AFTERNOON AND PERSISTING TONIGHT. PARTLY CLOUDY FRIDAY. TEMPERATURES FALLING TO FREEZING THIS AFTERNOON. LOW TONIGHT MINUS 6. HIGH FRIDAY FREEZING.

THUNDER BAY

- OCCASIONAL LIGHT SNOW TODAY. HIGH MINUS 3. CLOUDY WITH OCCASIONAL LIGHT SNOW OVERNIGHT AND FRIDAY. LOW OVERNIGHT MINUS 10. HIGH FRIDAY MINUS 2.

Produced by AIR QUALITY AND METEOROLOGY SECTION AIR RESOURCES BRANCH



WIND AND STABILITY FORECASTS

SOUTHERN ONTARIO
(south of 45° N. lat.)

MOIST AND STABLE. WINDS SW TO W 15 TO 30 KM/H.

NORTHEASTERN ONTARIO
(east of 85° W. long.)

MOIST AND STABLE. WINDS SW 15 TO 30 KM/H.

NORTHWESTERN ONTARIO
(west of 85° W. long.)

MOIST AND STABLE. WINDS SW TO W 15 TO 30 KM/H.

PUBLIC FORECASTS

METRO TORONTO, HAMILTON	- TODAY CLOUDY WITH AFTERNOON SUNNY PERIODS. TONIGHT CLEARING. LOW 1. SATURDAY SUNNY WITH CLOUDY PERIODS. HIGH 6.
LONDON	- ISOLATED FLURRIES THIS MORNING THEN BECOMING MAINLY SUNNY. HIGH 6. TONIGHT MAINLY CLEAR. LOW FREEZING. SATURDAY SUNNY WITH CLOUDY PERIODS. HIGH 7.
WINDSOR	- BECOMING MAINLY SUNNY. HIGH 7. TONIGHT MAINLY CLEAR. LOW FREEZING. SATURDAY INCREASING CLOUDINESS. HIGH 9.
SUDBURY	- TODAY CLOUDY AND WINDY WITH FLURRIES. HIGH FREEZING. TONIGHT AND SATURDAY MAINLY CLOUDY WITH A FEW FLURRIES. LOW TONIGHT MINUS 5. HIGH SATURDAY 3.
THUNDER BAY	- MOSTLY CLOUDY WITH OCCASIONAL SNOWFLURRIES TODAY AND SATURDAY. HIGHS TODAY AND SATURDAY MINUS 2. LOW TONIGHT MINUS 13.

POOR

QUALITY

ORIGINAL